BLACK BOX
NETWORK SERVICES

» KVM Solutions

# ServSwitch™ KVM

## Get the ultimate in control, convenience, and costs savings.

**19 New KVM Products**

### Put the industry's most comprehensive portfolio of KVM solutions to work for you.

- From desktop to server room, single- or multiuser.
- Remote management and KVM extension.
- KVM over IP enables server control around the globe.
- Secure network switching and specialty solutions.

# The power to do more... with less time,

## ServSwitch Octet™

See page 12

A keyboard, video, mouse (KVM) switch enables you to use one keyboard, video monitor, and mouse to control anywhere from two to several hundreds—even thousands—of CPUs or servers. KVM switches are appropriate for use in

## What's inside KVM:

**ServSwitch DT DVI USB**
Switch PCs with single-link DVI-D video and transparent USB keyboard/mouse.
Page 33

**ServSwitch DT Dual-Head DVI USB**
This two-port KVM switch provides the ultimate in multimedia and USB switching.
Page 32

**ServSwitch Wizard™ DVI Dual-Link, USB**
Share high-end video and USB peripherals between up to four workstations.
Page 30

**ServSwitch Wizard DVI Dual-Link with True USB Emulation**
Switch dual-, tri-, or quad-head computers and USB devices.
Page 31

**ServSwitch CX Uno**
Multiplatform KVM switching over CATx with remote access.
Page 20

**ServSwitch CX**
Four users, access and control of 16 or 24 multiplatform servers via CATx cable.
Page 14

**ServSwitch EC**
Perfect for all PS/2 switching and control!
Page 16

**ServSwitch EC with IP**
Economical KVM switching using IP for USB consoles.
Page 17

**ServSwitch CX with IP**
Runs over CATx cable and accesses servers over the Internet.
Page 15

**ServSelect™ IP VM**
Two users, 16 servers, and 4 USB devices, from anywhere.
Page 19

**ServView™ V KVM Drawer**
1U-dual-rail technology with the ultimate in features.
Pages 40-41

# space, and money.

## Related Products:

ServSwitch CX with IP
See page 14

## New Product:

ServSwitch DKM DVI-D KVM Matrix Switch
See pages 6–8

almost any computing or IT configuration. The ServSwitch™ line from Black Box has products for applications from desktop switching, server room/enterprise switching, and KVM extension to KVM trays, and specialty KVM including KVMoIP.

**ServSwitch CATx KVM Micro Extender Kits**
A compact, low-cost way to extend KVM signals up to 150 feet.
Page 65

**ServSwitch Brand DVI-D USB KVM-over-Fiber Extenders**
Extend DVI USB up to 2000 meters.
Page 67

**ServSwitch Agility**
Go further, do more with digital KVM extension over IP.
Pages 50-51

**ServSwitch Secure with USB**
Switch between secured and unsecured networks.
Page 26

## Best Sellers:

**ServSwitch Octet**
A KVM switch that supports multiplatform servers over CATx cables up to 1000 feet away.
Page 12

**ServSwitch 4site**
Simultaneously display video from four USB or PS/2 computers and enjoy resolutions up to 1900 x 1200, too!
Pages 10-11

**ServSwitch Wizard USB Extender with Audio**
Send USB keyboard and mice signals—plus stereo audio—up to 396 feet over CAT5/CAT5e/CAT6 cable.
Page 60

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**Legacy KVM** 82–83


## Resources

ServSwitch DTX Video
At www.blackbox.nl/videos.

FREE, Live, 24/7 Tech Support
Talk with an expert in 20 seconds or less at Go to blackbox.eu

## Buyer's Guide | Server Room/Enterprise/Multiuser KVM

For product details, see the page listed or go to **blackbox.nl**.

| No. of Servers | No. of Users | Console | | | Server Interfaces Supported | | | | No. of IP Users | CATx Cable & SAM | On-Screen Display | Code | Product Name |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PS/2 | USB | Sun | PS/2 | USB | Sun 8-Pin | Serial | | | | | |
| 4 | 1 | • | — | — | • | • | — | — | 1 | — | • | KV9304A-R2 | ServSwitch™ EC, **p. 17** |
| 4 | 1 | — | • | — | • | • | — | — | 1 | — | • | KV9404A | ServSwitch EC, **p. 17** |
| 4 | 2 | • | — | — | • | • | • | — | — | — | • | KV6104SA-R2 | ServSwitch Duo™ |
| 4 | 2 | • | • | — | • | • | — | — | — | — | • | SW741A-R3 | Matrix ServSwitch |
| 4 | 2 | • | • | • | • | • | • | • | — | — | • | SW761A-R4 | Matrix Plus ServSwitch |
| 4 | 4 | • | • | — | • | • | — | — | — | — | • | SW764A-R3 | Matrix ServSwitch |
| 4 | 4 | • | • | • | • | • | • | • | — | — | • | SW767A-R4 | Multiplatform Matrix |
| 8 | 1 | • | — | — | • | • | — | — | 1 | — | • | KV9308A-R2 | ServSwitch EC, **p. 17** |
| 8 | 1 | — | • | — | • | • | — | — | 1 | — | • | KV9408A | ServSwitch EC, **p. 17** |
| 8 | 2 | • | — | — | • | • | • | — | — | — | • | KV6108SA-R2 | ServSwitch Duo |
| 8 | 2 | • | • | — | • | • | • | • | — | • | • | KV22008A-R2 | ServSelect™ III, **p. 18** |
| 8 | 2 | — | • | — | • | • | • | — | — | — | • | KV6608SA | ServSwitch Duo USB |
| 8 | 2 | • | • | — | • | • | — | — | — | — | • | SW742A-R3 | Matrix ServSwitch |
| 8 | 2 | • | • | • | • | • | • | • | — | — | • | SW762A-R4 | Matrix Plus ServSwitch |
| 8 | 4 | • | • | • | • | • | • | • | — | — | • | SW768A-R4 | Multiplatform Matrix |
| 8 | 4 | • | • | — | • | • | — | — | — | — | • | SW765A-R3 | Matrix ServSwitch |
| 12 | 2 | • | — | — | • | • | • | — | — | — | • | KV6112FA-R2 | ServSwitch Duo |
| 16 | 1 | • | — | — | • | • | — | — | 1 | — | • | KV9316A-R2 | ServSwitch EC, **p. 17** |
| 16 | 1 | — | • | — | • | • | — | — | 1 | — | • | KV9416A | ServSwitch EC, **p. 17** |
| 16 | 2 | • | • | — | • | • | • | • | — | • | • | KV22016A-R2 | ServSelect III, **p. 18** |
| 16 | 2 | • | • | — | • | • | • | • | — | • | • | KV0216A | ServSelect III VM, **p. 18** |
| 16 | 2 | • | — | — | • | • | • | — | — | — | • | KV6116FA-R2 | ServSwitch Duo |
| 16 | 2 | — | • | — | • | • | • | — | — | — | • | KV6616FA | ServSwitch Duo USB |
| 16 | 2 | • | • | — | • | • | — | — | — | — | • | SW743A-R3 | Matrix ServSwitch |
| 16 | 2 | • | • | • | • | • | • | • | — | — | • | SW763A-R4 | Matrix Plus ServSwitch |
| 16 | 2 | — | • | — | • | • | — | — | — | • | • | KVM2016A | ServSwitch Multiuser |
| 16 | 2 | • | • | — | • | • | • | • | 2 | • | • | KV2116A | ServSelect IP VM, **p. 19** |
| 16 | 4 | • | • | — | • | • | • | — | — | • | • | KV0416A-R2 | ServSwitch CX, **p. 14** |
| 16 | 4 | • | — | — | • | • | • | — | — | — | • | KV6416FA-R2 | ServSwitch Quadro™ |
| 16 | 4 | • | • | — | • | • | — | — | — | — | • | SW766A-R3 | Matrix ServSwitch |
| 16 | 4 | • | • | • | • | • | • | • | — | — | • | SW769A-R4 | Multiplatform Matrix |
| 16 | 4 | • | • | — | • | • | • | • | — | • | • | KV1703A | ServSwitch Octet™, **p. 12** |
| 16 | 4 | • | • | — | • | • | • | — | 1 | • | • | KV1416A-R2 | ServSwitch CX with IP, **p. 15** |
| 16 | 4 | • | • | — | • | • | • | • | 4 | • | • | KV4116A | ServSelect IP VM, **p. 19** |
| 24 | 4 | • | • | — | • | • | • | — | 1 | • | • | KV1424A-R2 | ServSwitch CX with IP, **p. 15** |
| 24 | 4 | • | • | — | • | • | • | — | — | • | • | KV0424A-R2 | ServSwitch CX, **p. 14** |
| 32 | 2 | — | • | — | • | • | — | — | — | • | • | KVM2032A | ServSwitch Multiuser |
| 32 | 8 | • | • | — | • | • | • | • | — | • | • | KV1701A | ServSwitch Octet, **p. 12** |
| 42 | 4 | • | • | — | • | • | • | • | — | • | • | KV1700A | ServSwitch Octet, **p. 12** |
| 64 | 16 | • | • | — | • | • | • | • | — | • | • | KV1702A | ServSwitch Octet, **p. 12** |
| n x n | | • | • | — | • | • | — | — | All | — | • | DTX5000 | ServSwitch DTX, **pp. 48-49** |
| n x n | | — | • | — | — | • | — | — | All | — | • | DTX5002 | ServSwitch DTX, **pp. 48-49** |
| n x n | | — | • | — | — | • | — | — | All | — | • | DTX5001 | ServSwitch DTX, **pp. 48-49** |

## Hot KVM Technologies from Black Box

Adding to or upgrading your KVM technology? We give you features you won't find for a better price anywhere else.

KVM switching has come a long way from analog boxes with a manual dial on the front.

See just how far by checking out the hottest KVM technologies, brought to you by Black Box. We also have the widest selection of KVM switches, extenders, and cables, all in one place.

### 1. True USB Emulation

Earlier USB KVM switches relied upon standard keyboard and mouse templates to tell each computer system how to deal with the connected peripherals. ServSwitch™ KVM switches that support True USB Emulation technology channel the identities of the connected keyboard and mouse and present those "real" profiles to every connected system concurrently. This means specialized keyboards and mice (i.e. USB Sun™ keyboards, Glidepoint® mice, jog wheels, and more) are fully supported.

ServSwitch Wizard™ DVI Dual-Link, USB, **p. 30**
ServSwitch Wizard DVI Dual-Link with True USB Emulation, **p. 31**

### 2. Multilayered Switching

With this technology, attached peripheral devices can be switched independently to any computer system to achieve multiple tasks in parallel. Or they can be switched collectively so you have full control of a specific target computer. Switched layers can include keyboard/video/mouse, audio, USB peripheral 1, and USB peripheral 2. Multilayered switching is usually controlled via hotkey or front-panel buttons, but certain models are controlled via an on-screen display (OSD).

ServSwitch Wizard DVI Dual-Link, USB, **p. 30**
ServSwitch Wizard DVI Dual-Link with True USB Emulation, **p. 31**
ServSwitch DT Dual-Head DVI USB, **p. 32**
ServSwitch DT DVI with USB, **p. 33**
ServSwitch DT Pro II, **p. 34**

### 3. No-Loss Video

Typical KVM extenders use techniques like compression and frame dropping to manage bandwidth across the interconnect cabling. But for those applications where every frame counts, we have ServSwitch extender models with no-loss video technology.

ServSwitch Brand DVI-D USB KVM-over-Fiber Extender, **p. 67**
ServSwitch DVI-D Plus USB KVM Extender Kits, **p. 68**

### 4. Secure Switching

The ServSwitch Secure KVM Switch family of products provides a higher-than-usual level of security in switching. Black Box features two levels of third-party certification—TEMPEST and EAL4+. For details about secure switching technology, see **p. 25**.

Switches that are TEMPEST-approved:

ServSwitch Secure KVM Switches with USB, DVI and VGA, **p. 26**

Switches that are in CC Evaluation (EAL4+):

ServSwitch Secure KVM Switches with USB and DVI, **p. 28**
ServSwitch Secure KVM Switches with USB and VGA, **p. 29**
ServSwitch Secure KVM Switches with USB, VGA, and Card Reader, **p. 29**

### 5. Intelligent Keyboard Mapping Engine (IKME)

This feature provides special key sequences from a standard PC keyboard that emulate the special keystrokes needed for some Sun or Mac® systems. You won't have trouble finding STOP, AGAIN, PROPS, UNDO, etc., on a Sun system from your KVM switch or directly from a keyboard.

ServSwitch Wizard IP, **p. 23**

### 6. Redundant Power Supply

As KVM switching systems have become integral to IT infrastructure, they have grown to support hundreds—if not thousands—of servers. To prevent a failure at the power supply, many ServSwitch systems have been fitted with redundant power supplies. They eliminate the single point of failure and ensure continuous operation.

ServSwitch DKM, **pp. 6-7**
ServSwitch CX KVM Switch and CX KVM Switch with IP, **pp. 14-15**
ServSwitch Wizard IP Plus, **p. 23**

### 7. Management Systems

With IT infrastructure being spread out through the use of virtual data centers, distributed and cloud computing, and KVMoIP systems, keeping track of servers, data resources, and users is getting complex. Management systems enable you to compile a single list of IP resources and a single list of users and their access rights. With management systems, you can add, edit,
or eliminate users from a single appliance instead of using a checklist and going through multiple switches and log-ins.

ServSwitch Octet, **p. 12**
ServSwitch Wizard IP and IP Plus, **p. 23**
ServSwitch DTX Control Appliance, **pp. 48-49**

## Common KVM switch features

Don't forget Black Box offers these great KVM features, too.

- **Platform** — The type of computer platform a KVM switch can handle. In addition to PCs, KVM products can be linked to Sun, Mac, SGI™, RS/6000®, HP9000™, and others.
- **Number of ports** — The number of computers you can connect directly to a single KVM switch.
- **Cascading/scalability** — Many advanced KVM switches support the cascading of units to increase the number of computers controlled to more than 1000. Control via IP is also possible with newer models.
- **Maximum resolution** — A measure of the video bandwidth supported by a KVM switch. If you use graphics- or video-intensive applications, the higher the resolution support, the better.
- **Additional features** — Emulation, distance to keyboard/monitor/mouse and computer, on-screen menus, and number of users.

### Black Box is your best value GUARANTEED

If you are adding to or considering upgrading your KVM technology, turn to Black Box for your best value. Put Black Box's more than 30 years of technology experience to work for you by contacting our FREE, 24/7 Tech Support.

## ServSwitch DKM DVI-D KVM Matrix Switch

# One switch that does it all — four modes of switching,

new

- Virtually instantaneous switching ensures seamless signal delivery.
- Four switching modes—matrix, single-head, dual-head, and quad-head.
- Supports high-resolution DVI-D and USB-style keyboard/mouse, plus USB peripheral and audio options.
- Maximum resolution of 1920 x 1200 at 60 Hz.
- Uses CATx cabling, or single- or multimode fiber and extends signals up to 10 kilometers.
- Connects via ServSwitch DVI CATx KVM Extenders (ACS4001A-R2) or ServSwitch DVI Fiber Optic Extenders (ACS4001A-R2-MM, or -SM), or other CATx and fiber extenders.
- Available in 19" housings for high-density applications.
- Configurations include 8 users to 8, 16, or 32 CPUs; and 16 users to 16 or 32 CPUs.
- ✦✦ WARRANTY — 2 Years

Virtually instantaneous switching and the transmission of high-quality DVI-D signals are what make the Black Box® ServSwitch™ DKM switching system a milestone in innovative KVM switching.

ServSwitch DKM is a scalable matrix switch that supports DVI-D and transmits USB Human Interface Device (HID), stereo audio, and RS-232 signals.

Extend KVM signals up to 140 m over CATx, up to 400 meters over multimode fiber, or up to 10 kilometers over single-mode fiber.

Certain modes of the single-head KVM switching support a transparent serial interface at up to 19 kbps and a hardware handshaking. Use it to control a single device requiring a full hardware handshaking or up to three devices without handshaking. In dual-head mode, devices support TxD and RxD only, with no hardware handshaking.

The ServSwitch DKM features hotkey controls and an on-screen display (OSD). Use the OSD to name connected devices and configure the system. A front-panel display with remote control is also available. Switching can be done remotely via the RS-232 serial interface or the TCP/IP interface.

For ultimate plug-and-play support, ServSwitch DKM has DDC read capability to receive true EDID information from the attached displays. The digital ServSwitch DKM does not need skew compensation like analog KVM switches do; the maximum video resolution is supported over the full distance.

### Setup and Operation Modes

You can configure the ServSwitch DKM DVI-D KVM Switch in several ways. Connect the switch to CATx or fiber cabling, which then connects to the CPU/server with a local transmitter and, on the other side, connects to a receiver at the USB keyboard/mouse/monitors (user stations).

### Matrix (crosspoint) switching

The DKM switch can be configured as 32 input to 16 output ports; or in reverse mode as 16 inputs to 32 outputs. Transmitters are installed at each of the CPUs, and DVI-D, serial, and audio signals go up to 10 kilometers depending on the cabling used. Control the switch with the serial (RS-232) port or via the built-in Web interface. The matrix switch mode is especially ideal for post production and digital signage applications.

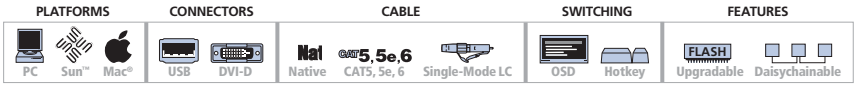
### KVM switch

The DKM switch operates as a KVM switch in three configurations: 16 users to 32 CPUs (single-head); 8 users to 16 CPUs (dual-head); and 4 users to 8 CPUs (quad-head). When used as a KVM switch, the DKM is cascadable: single-head, up to 1024 ports from one monitor; dual-head, up to 256 ports from two monitors; quad-head, up to 64 ports from four monitors.

### Share Mode

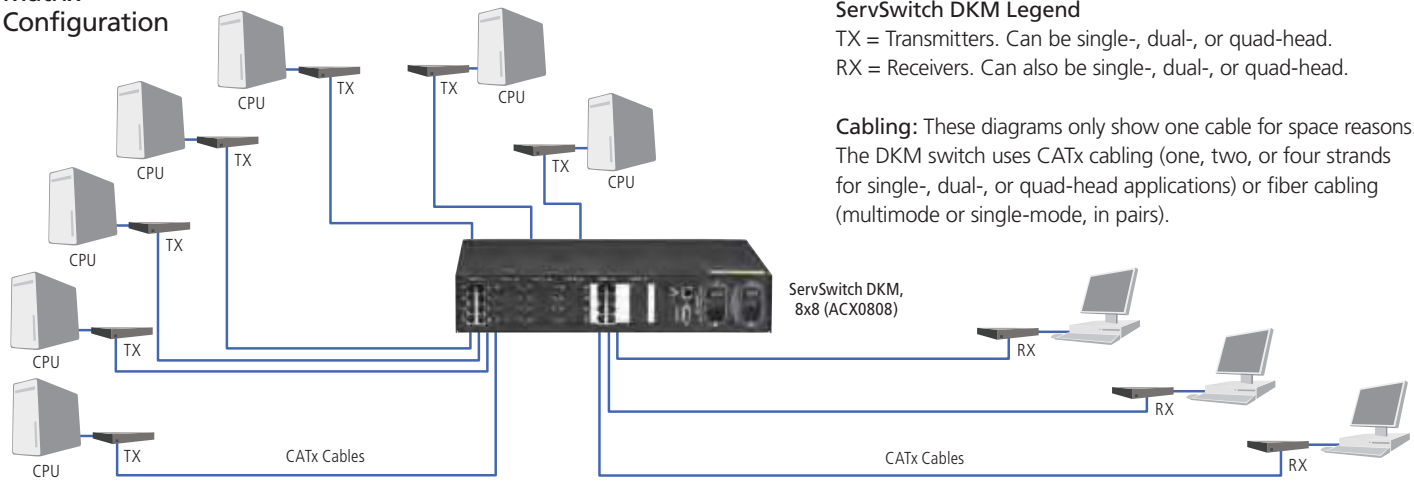
Share Mode enables more than one user to have access to the same CPU at the same time. This is ideal in classrooms or conference rooms where an instructor or presenter wants to use a laptop and a projector. It also gives an IT administrator access to a user's monitor for troubleshooting or applying updates.

Additionally, the KVM switch enables port locking, meaning you can partner ports and ensure they switch in tandem. This way, when you switch CPUs, monitors being used in Share Mode follow automatically.




# plus extension over CATx or fiber.

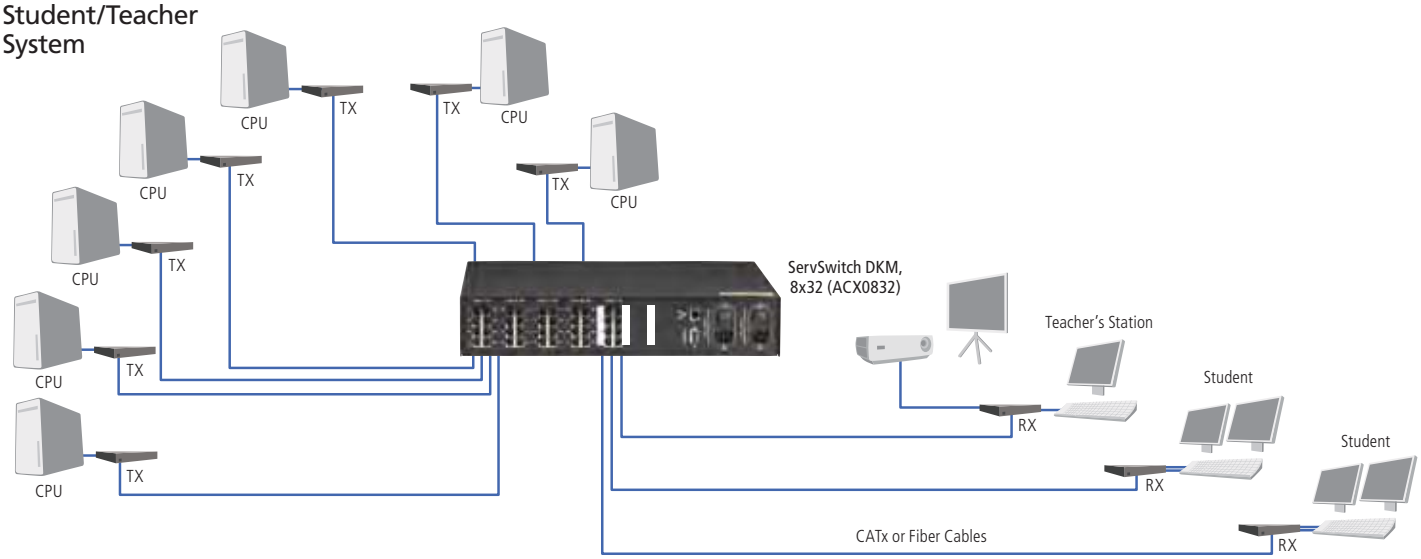
## Matrix Configuration




**ServSwitch DKM Legend**
TX = Transmitters. Can be single-, dual-, or quad-head.
RX = Receivers. Can also be single-, dual-, or quad-head.

**Cabling:** These diagrams only show one cable for space reasons. The DKM switch uses CATx cabling (one, two, or four strands for single-, dual-, or quad-head applications) or fiber cabling (multimode or single-mode, in pairs).

## Student/Teacher System




### Control Room Mode

You can connect the KVM switch to servers and monitors. The OSD enables the user to switch monitors between CPUs, and the hotkeys enable the user to switch between one keyboard/mouse for all the monitors. You can select from the list of available CPUs, and the users don't need to know the CPU's IP address to use the keyboard/mouse. Users can use Share Mode in this configuration also, giving access to more than one user at the same time.

### Student/Teacher System

One of the modes that truly sets DKM above the rest, the Student/Teacher system has two configurations:

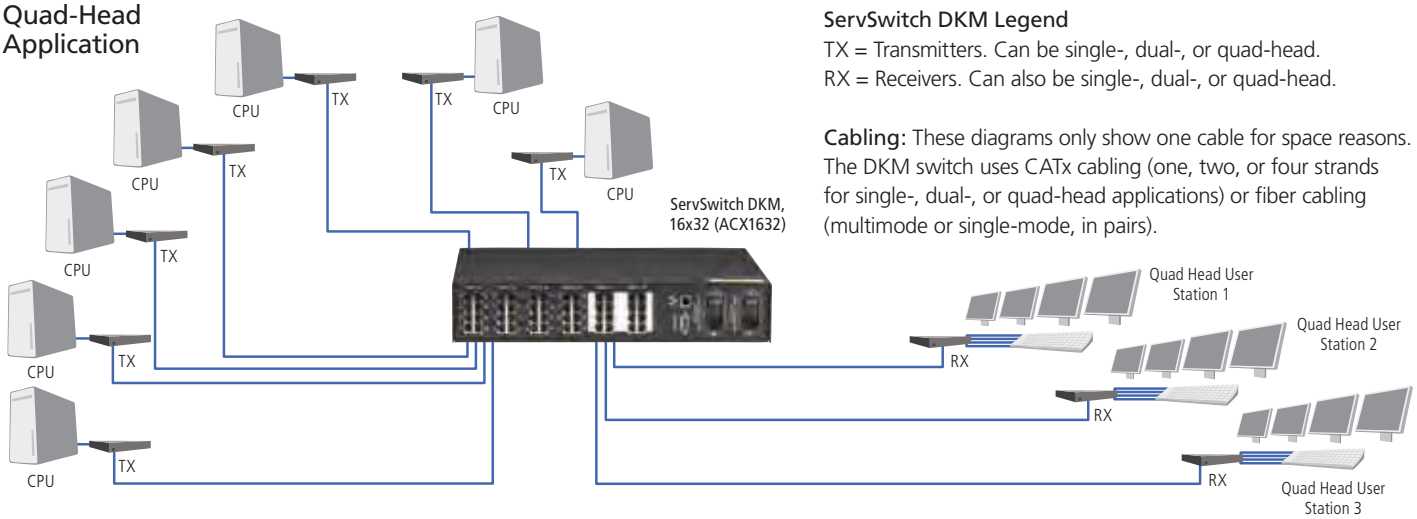
Up to 15 students: By connecting the student workstations with twisted-pair CATx cable, the teacher can monitor each student's work at his/her station. Additionally, the teacher can display to any of the student monitors, or share any of the workstation monitors with each CPU.

Up to 31 students: The student workstations are connected by single-strand CATx cable, enabling each CPU to be displayed at one monitor (including a large display monitor). In this configuration, too, the teacher can monitor each student at his/her station.

*For more information and specs, turn the page.*

## ServSwitch DKM DVI-D KVM Switch (Continued)

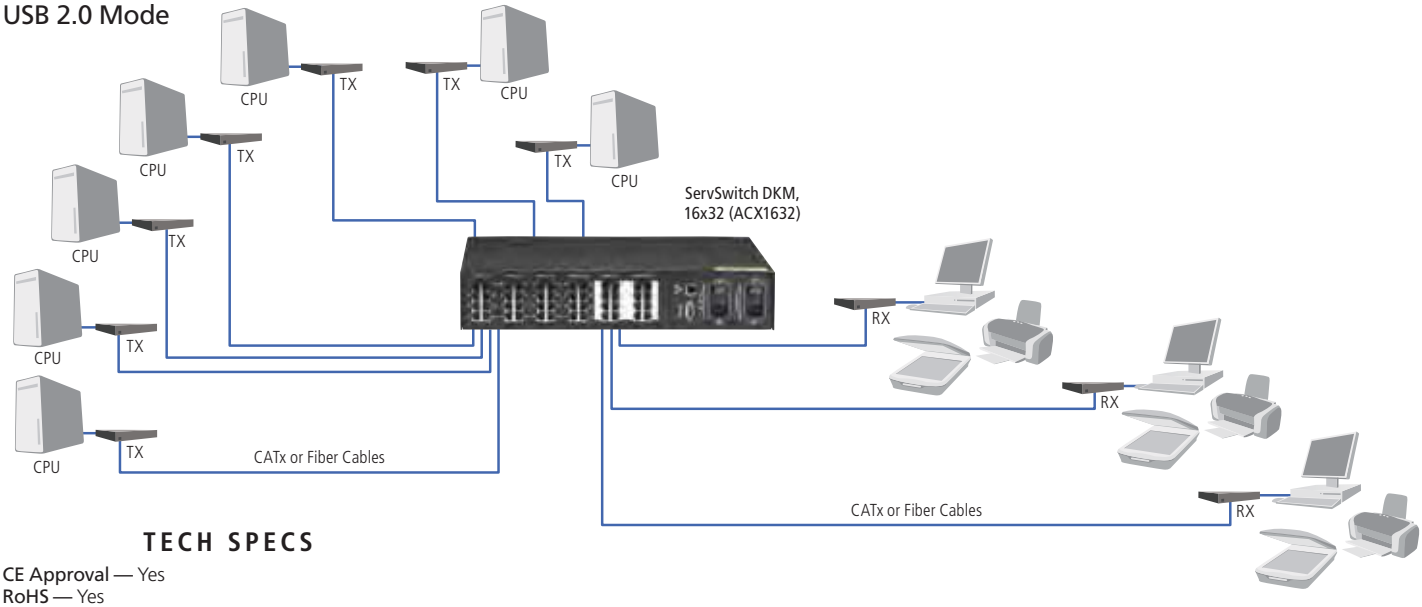
### Quad-Head Application




**ServSwitch DKM Legend**
TX = Transmitters. Can be single-, dual-, or quad-head.
RX = Receivers. Can also be single-, dual-, or quad-head.

**Cabling:** These diagrams only show one cable for space reasons. The DKM switch uses CATx cabling (one, two, or four strands for single-, dual-, or quad-head applications) or fiber cabling (multimode or single-mode, in pairs).

### Single-Head KVM/ USB 2.0 Mode




### TECH SPECS

**CE Approval** — Yes
**RoHS** — Yes
**Connectors** — ACX0808: Console: (8) RJ-45;
Computer: (8) RJ-45;
ACX0816: (8) RJ-45;
Computer: (16) RJ-45;
ACX0832: (8) RJ-45;
Computer: (32) RJ-45;
ACX1616: (16) RJ-45;
Computer: (16) RJ-45;
ACX1632: (16) RJ-45;
Computer: (32) RJ-45;
All: Network: (1) RJ-45 10/100;
Configuring: (1) DB9 F;
Power: (2) IEC320 M, C14, dual power inputs
**Power** — 100 to 240 VAC, 47 to 66 Hz
**Size** — 3.3"H x 17.6"W x 17.4"D (8.4 x 44.7 x 44.2 cm)
**Weight** — ACX0808: 12.9 lb. (5.9 kg);
ACX0816: 13.1 lb. (5 kg);
ACX0832: 13.5 lb. (6.1 kg);
ACX1616: 13.5 lb. (6 kg);
ACX1632: 13.7 lb. (6.2 kg)

*For more info, turn the page.*

*NOTE: Transmitters and receivers can be copper or fiber based. Computer and expansion cards can also be copper or fiber based.*

| Item | Code |
|---|---|
| ServSwitch DKM DVI-D KVM Switches | |
| 8 Users to 8 CPUs | ACX0808 |
| 8 Users to 16 CPUs | ACX0816 |
| 8 Users to 32 CPUs | ACX0832 |
| 16 Users to 16 CPUs | ACX1616 |
| 16 Users to 32 CPUs | ACX1632 |
| ✦ Include (1) ServSwitch DKM with (1) internal power supply, (2) 6-ft. U.S. power cords, (1) 32-button IR remote control, (1) 6-ft. DB9 M/F serial cable, (2) rackmount ears with (10) mounting screws, and (1) CD-ROM with user's manual. | |
| **You may also need....** | |
| ServSwitch Single DVI CATx KVM Extender | |
| Transmitter | ACS4001A-R2-T |
| Receiver | ACS4001A-R2-R |
| ServSwitch DKM DVI-D KVM Switch | |
| Redundant Power Supply | ACXPSR |

## ServSwitch KVM Extender/Cross-Repeaters

### Make your KVM extensions go even farther, over a mix of copper and fiber cabling.

PLATFORMS: PC, Sun™, Mac®
CABLES: CAT5, 5e, 6; Single-Mode LC; Multimode LC

- Extend the length of your KVM extensions with these extender/cross-repeaters.
- Work with a number of ServSwitch KVM extenders, including the transmitters and receivers for the ServSwitch DKM (**pages 6-8**).
- Support dual-head extensions; a second repeater is required for the second video channel.
- ✦✦ WARRANTY — 2 Years

The ACX1000 doubles the length of CATx cable between ServSwitch Single DVI CATx KVM Extender transmitters and receivers (ACS4001A-R2-T and ACS4001A-R2-R) or between these extenders and a ServSwitch DKM DVI-D KVM Switch (ACX0808, ACX0816, ACX0832, ACX1616, ACX1632).

The ACX1000-CM converts copper interconnect cable to multimode fiber interconnect. Use it in pairs, as the signal needs to be converted back to copper.

The ACX1000-DM converts dual CATx interconnect cable to multimode fiber, two in, two out for dual-head applications or the equivalent. This product needs to be used in pairs.

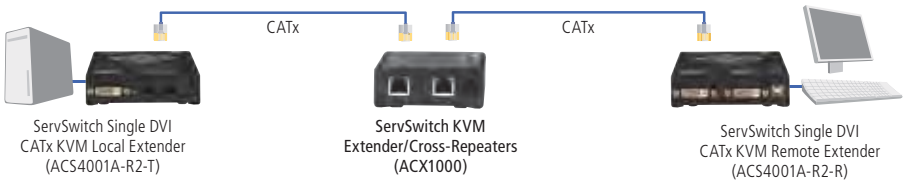
The ACX1000-MS converts multimode fiber to single-mode to reach distances of up to 20 kilometers.

The ACX1000-MM enables you to double the cabling distance between ServSwitch DVI multimode fiber KVM extender transmitters and receivers. When it is used with a compatible extender kit, it extends KVM signals up to 800 meters over 50-micron fiber cable.

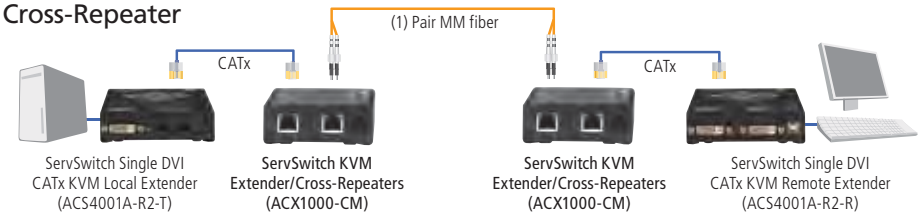
### TECH SPECS

**Compatibility (with ServSwitch KVM Extender Transmitters and Receivers) —**
All: ACX0808, ACX0816, ACX0832, ACX1616, ACX1632;
ACX1000, ACX1000-CM: ACS4001A-R2-T and ACS4001A-R2-R, ACS4001A-R2 kit, ACS4201A-R2 kit, ACS4004A-R2 kit, ACS2009A-R2 kit, ACS2209A-R2 kit;
ACX1000-DM: ACS4201A-R2 kit, ACS2209A-R2 kit
ACX1000-MS, ACX1000-MM: ACS4001A-R2-MM kit, ACS4201A-R2-MM kit, ACS2009A-R2-MM kit, ACS2209A-R2-MM kit
**CE Approval** — Yes
**RoHS** — Yes

### CATx/Cross-Repeater


CATx
CATx
ServSwitch Single DVI CATx KVM Local Extender (ACS4001A-R2-T)
ServSwitch KVM Extender/Cross-Repeaters (ACX1000)
ServSwitch Single DVI CATx KVM Remote Extender (ACS4001A-R2-R)

### Cross-Repeater


(1) Pair MM fiber
CATx
CATx
ServSwitch Single DVI CATx KVM Local Extender (ACS4001A-R2-T)
ServSwitch KVM Extender/Cross-Repeaters (ACX1000-CM)
ServSwitch KVM Extender/Cross-Repeaters (ACX1000-CM)
ServSwitch Single DVI CATx KVM Remote Extender (ACS4001A-R2-R)

*NOTE: Some applications of the extender/repeaters do not require a pair. For details, call our FREE Tech Support at **030-241 77 99**.*

| Item | Code |
|---|---|
| ServSwitch KVM Extender/Cross-Repeaters | |
| CATx to CATx | ACX1000 |
| CATx to Multimode Fiber | ACX1000-CM |
| Dual CATx to Multimode Fiber | ACX1000-DM |
| Multimode to Single-Mode Fiber | ACX1000-MS |
| Multimode to Multimode Fiber | ACX1000-MM |

✦ Includes (1) ServSwitch KVM Extender/Cross Repeater, (1) 5-V, 4-A, power supply, (1) U.S. power cable, and (1) user's manual

## ServSwitch Fiber CWDM Mux/Demux

### Save space and money by reducing data transmission to one pair of fiber strands.

PLATFORMS: PC, Sun™, Mac®
CABLES: Single-Mode LC

new

- Use to extend single-mode fiber runs up to 40 kilometers.
- Reduces four pairs of fiber cabling to one pair, then splits it again at the other end.
- Mux/demux uses Course Wave Division Mux (CWDM) technology.
- Data is not affected at either end.
- Small footprint chassis and no power supply needed.
- Ideal for fiber runs between buildings.
- ✦✦ WARRANTY — 2 Years

**RoHS** — Yes

| Item | Code |
|---|---|
| ServSwitch Fiber CWDM Mux/Demux | ACXCWDM4 |

## ServSwitch 4site

# Display video from four servers on one screen

*KVP4000A: top: front view; bottom: rear view*

- Great for control rooms, server farms, and security systems.
- Video signals can be analog VGA (1600 x 1200) or digital DVI (1900 x 1200), plus the 4site supports touch screens.
- Get full KVM switching capability for up to four USB or PS/2 servers.
- Supports USB and PS/2 keyboards and mice for multiplatform use.
- Works with KVM-over-IP access points.
- Less than 1U high. Rackmount kit is included.
- No software needed.
- ✦✦ WARRANTY — 2 Years

### One for all.

The ServSwitch™ 4site gives you true KVM switching for controlling four servers from one keyboard and mouse. Plus, it enables you to display the video from those four servers on one monitor — all at the same time, and in real time!

This ServSwitch is a real bonus if you work in a control room or need to keep track of multiple screens. You can view them all on the one monitor at your workstation instead of setting up a bank of monitors.

You have four ways to view the video from your different computers: Full-Screen Mode, Quad-Mode, Dual-Mode, and Picture-in-Picture (PiP) Mode.

### One-to-one Full-Screen Mode.

In Full-Screen Mode, the video from one of the four connected CPUs or servers is displayed on the entire screen and in maximum resolution. Operation of the keyboard and mouse automatically switches to the selected CPU or server.

### Four-in-one Quad Mode.

In Quad Mode, the screen is split into four fields of equal size. Each field displays the live video from one of the connected CPUs or servers. Select keyboard and mouse operation from the field of the corresponding computer.

### Seeing double with Dual Mode.

When you only have two computers attached to the ServSwitch 4site, use Dual Mode. Video from each of the CPUs or servers is displayed on a single monitor. As in Quad Mode, select keyboard and mouse operation from the field of the corresponding computer.

### Three-on-one Picture-in-Picture Mode.

In Picture-in-Picture (PiP) mode, you can display the full-screen video from one of your computers. Then, the video from up to three other computers is shown as thumbnail images down the right margin of the screen. This way, you can monitor one computer while simultaneously keeping an eye on the other three. You can also scale the images to a comfortable viewing size.

### Advanced video processing.

Unlike other video KVM switches, the 4site features an advanced video processing engine that enables a number of unique viewing opportunities. Take two to 16 video feeds, and display them on a large format monitor. Tie multiple KVM switching systems together to be monitored in your network operations center. Mix DVI and VGA inputs and get a high quality, properly scaled output. You won't find these features anywhere else.

### Clearly compatible.

The ServSwitch 4site gives you the flexibility to use all types of monitors and video equipment. It supports all combinations of analog VGA and digital DVI video cards, monitors, even cameras.

The switch automatically determines the resolution of the monitor and each of the four servers. For clear, sharp video, digital resolutions up to 1920 x 1200 at 60 Hz are supported, and VGA analog resolutions of 1600 x 1200 are supported.

### Easy switching.

You can switch between the four operation modes and switch control to your target machines by using the front-panel buttons, keyboard commands, mouse functions, or touch screens.

### Use almost anywhere.

You can use this switch in a variety of environments, such as in control rooms, server farms, security systems, and anywhere you need to monitor multiple video sources.

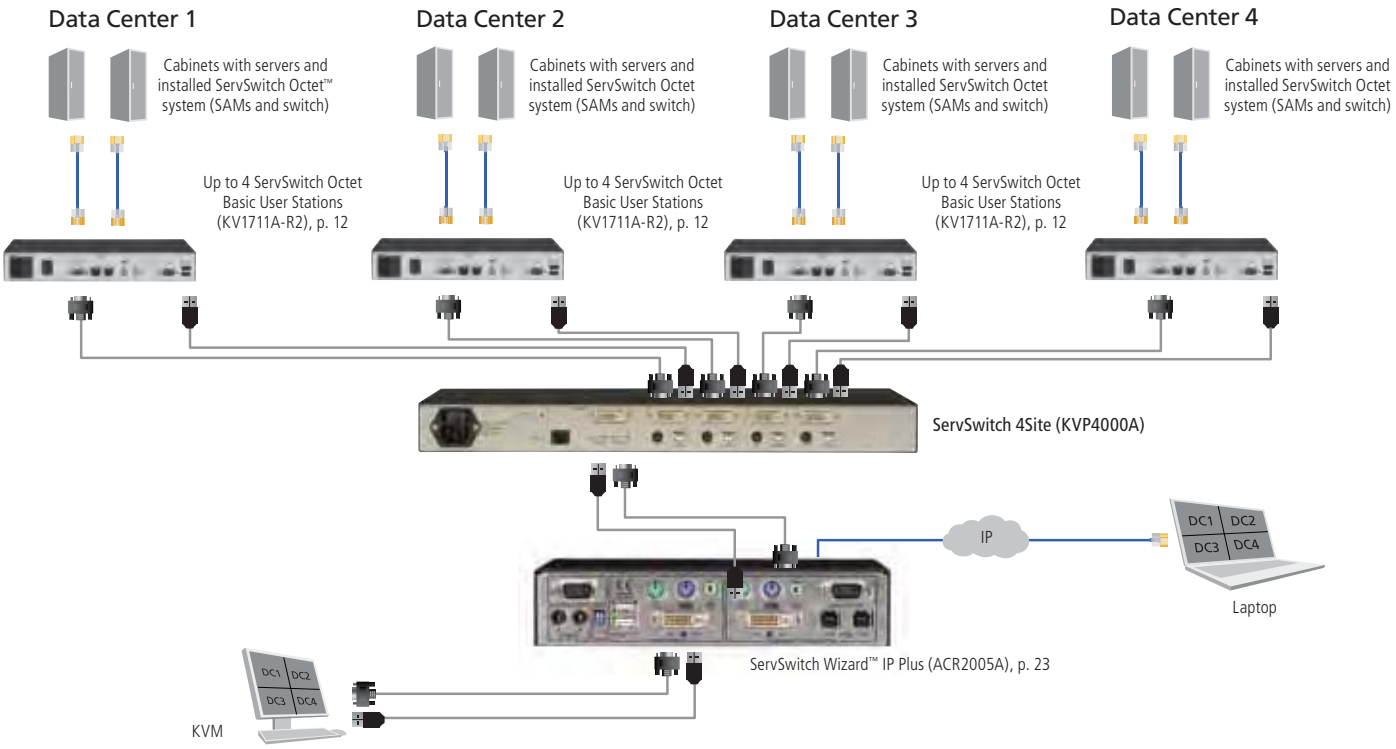
### Visualize everything.

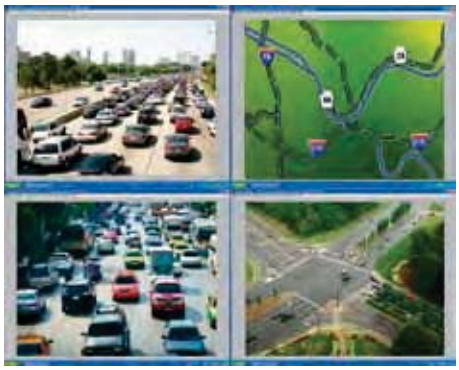
You can also use the ServSwitch 4site to tie up to four KVM switching systems together. Centralize management for the ultimate KVM switching experience!

Connect it to a ServSwitch Octet™ (**page 12**) for use in large-scale systems. Display and control video on your local console from any four computers out of a much larger pool of servers.

You can even control it remotely over the Internet using a KVM-over-IP access point, such as the ServSwitch Wizard™ IP Plus (**page 23**). Connect all devices to the ServSwitch from

# simultaneously and in real time!


Data Center 1
Data Center 2
Data Center 3
Data Center 4
Cabinets with servers and installed ServSwitch Octet™ system (SAMs and switch)
Cabinets with servers and installed ServSwitch Octet system (SAMs and switch)
Cabinets with servers and installed ServSwitch Octet system (SAMs and switch)
Cabinets with servers and installed ServSwitch Octet system (SAMs and switch)
Up to 4 ServSwitch Octet Basic User Stations (KV1711A-R2), p. 12
Up to 4 ServSwitch Octet Basic User Stations (KV1711A-R2), p. 12
Up to 4 ServSwitch Octet Basic User Stations (KV1711A-R2), p. 12
ServSwitch 4Site (KVP4000A)
IP
DC1
DC2
DC3
DC4
Laptop
ServSwitch Wizard™ IP Plus (ACR2005A), p. 23
KVM



*In Quad Mode, you can view the output from four different video sources.*

*In Picture-in-Picture Mode, you can view the full screen display on one video source along with smaller images from the three other video sources.*

## TECH SPECS

**Controls** — (4) port-switching front buttons; (1) Quad-Mode button; (1) PiP-Mode button
**Distance (Maximum)** — 16.4 ft. (5 m) to console; 16.4 ft. (5 m) to CPU
**Resolution (Maximum)** — VGA: 1600 x 1200; DVI: 1920 x 1200
**CE Approval** — Yes
**RoHS** — Yes
**Connectors** — CPU: (4) DVI-I F, (4) 6-pin mini DIN F, (4) USB Type B F;
Console: (1) DVI-I F, (2) USB Type A F;
Management port: (1) RJ-45 (serial RS-232);
Power: (1) IEC 320
**Indicators** — (6) LEDs; (4) Select/Powered status, (1) Quad Mode, (1) PiP Mode
**Power** — 100–240 VAC, 50–60 Hz, 40 W maximum
**Size** — 1.7"H x 17.1"W x 9.2"D (4.3 x 43.4 x 23.4 cm)
**Weight** — 6.4 lb. (2.9 kg)

any location using Web client via a LAN or the Internet.

### Easy, menu-based configuration.

Set up your ServSwitch 4site parameters with an easy-to-use on-screen display. Use different menus to set up your preferences for System Hotkey, Configuration, Console, Video, Computer, and Help.

With the System Hotkey, you can set hotkeys, timeouts, language, security levels, zoom, position, and more.

In the Configuration Mode, you can save the current parameters, restore the last saved configuration, or reset the unit to the factory defaults.

With the Console setup, you can select keyboard layout, resolution, and more.

In the Video screen, you can set parameters such as brightness, contrast, etc.

Select your keyboard and mouse type with the Computer setup screen.

Check keyboard commands, firmware, and contact information in the Help screen.

| Item | Code |
|---|---|
| ServSwitch 4site | KVP4000A |
| **You may also need…** | |
| ServSwitch 4site Cable | |
| 1.8-m | EHN900024U-0006 |
| 3.0-m | EHN900024U-0010 |

*NOTE: To link the switch to the computers/ KVM switching system, you need to purchase additional cables. See the ordering block above.*

# ServSwitch Octet
## Cutting-edge server management with support for USB, serial RS-232, and audio!

PLATFORMS: PC, Sun®, Mac® | CONNECTORS: PS/2, USB, VGA | CABLE: CAT5, 5e, 6 | PERIPHERALS: Spkr./Mic, USB, Serial, Touch Screen | SWITCHING: OSD, Hotkey, Serial | FEATURES: FLASH Upgradable, Cascadable

Great control and security features!

*KV1700A: top: front view; bottom: rear view*

- Supports connections up to 300 m over solid CAT5/5e/6.
- Maximum resolution of 1600 x 1200 at 30.4 m; up to 1280 x 1024 at 300 m using the Enhanced Video User Station.
- Great for real-time remote control.
- Control and configure locally.
- Secure access for authorized users only.
- Future-proof flash memory.
- Non-blocking access to servers.
- ✦✦ WARRANTY — 2 Years

The ServSwitch Octet™ offers server management at its best with all the control and security features you need!

The included Octoware control software enables you to monitor complete system setup via IP access, scan connected devices, edit user profiles, and flash upgrade system components.

Octoware also monitors and stores the entire system's switching activities and logins, providing you with a great deal of security. And you can control the ServSwitch Octet via SNMP.

### The system in detail.

The system consists of the ServSwitch, a User Station, and Server Access Modules (SAMs). Connect them all by using CAT5 or higher cable.

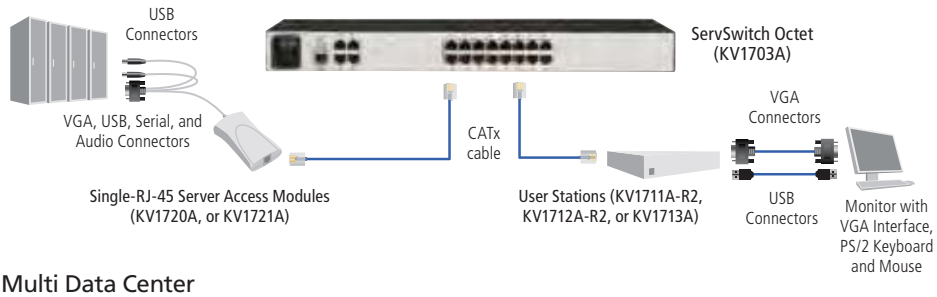
The Basic User Station offers video resolutions up to 1024 x 768. The Enhanced-Video User Station adjusts for skew between RGB signals and offers video resolutions up to 1280 x 1024.

Use the USB User Station with Serial/Audio Support with a PS/2 or USB keyboard and mouse. It offers video resolutions up to 1280 x 1024.

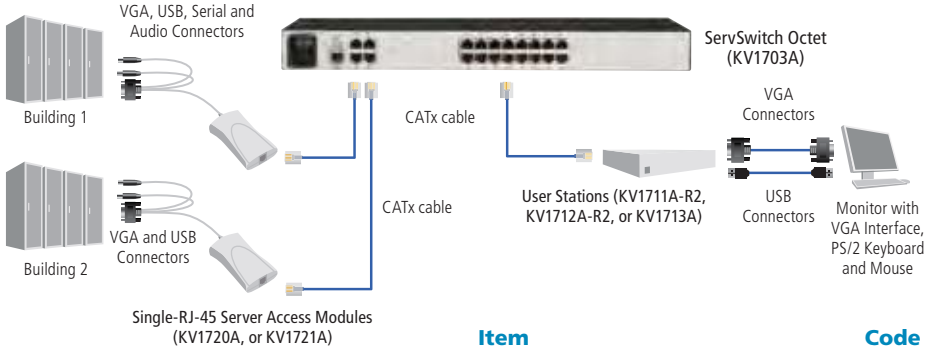
For each attached CPU, you need one SAM. Each SAM is a matchbox-size unit with KVM connectors on the end of a pigtail cable. The SAM draws little to no power, ensures keep-alive functionality, provides keyboard and mouse emulation, and is independent of the switching system's status.

The Dual RJ-45 SAMs with Audio/Serial RS-232 Support enable two users to share access to one CPU. They provide redundant system setup, eliminating a single point-of-failure risk. They also transfer stereo audio to the user station and mono audio back to the attached CPU.

### Single Data Center


USB Connectors
VGA, USB, Serial, and Audio Connectors
ServSwitch Octet (KV1703A)
CATx cable
VGA Connectors
USB Connectors
Single-RJ-45 Server Access Modules (KV1720A, or KV1721A)
User Stations (KV1711A-R2, KV1712A-R2, or KV1713A)
Monitor with VGA Interface, PS/2 Keyboard and Mouse

### Multi Data Center




### TECH SPECS

**Mice Supported** — User and CPU: Wheel mouse, PS/2, Sun; KV1713A: Also USB
**Number of CPUs (Maximum)** — KV1703A: 256; KV1700A: 800; KV1701A: 4096; KV1702A: 16,384
**Platforms Supported** — IBM® PC and compatible, PS/2®, Sun®, Sun USB, serial, Macintosh® USB
**Security** — Password, user profiles, auto time logout, event log, LDAP
**CE Approval** — Yes
**RoHS** — Yes
**Power** — 100–240 VAC, 50–60 Hz, autosensing
**Size** — KV1703A, KV1700A: 1.7"H x 17"W x 13.9"D (4.3 x 43.2 x 35.3 cm);
KV1701A: 1.7"H x 17"W x 11.1"D (4.3 x 43.2 x 28.2 cm);
KV1702A: 3.5"H x 17"W x 11.1"D (8.9 x 43.2 x 28.2 cm);
KV1711A-R2, KV1712A-R2, KV1713A: 1.75"H x 11"W x 11.5"D (4.4 x 27.9 x 29.2 cm)

| Item | Code |
|---|---|
| ServSwitch Octet™ | |
| 4 Users x 16 CPUs | KV1703A |
| 4 Users x 42 CPUs | KV1700A |
| 8 Users x 32 CPUs | KV1701A |
| 16 Users x 64 CPUs | KV1702A |
| User Stations | |
| Basic | KV1711A-R2 |
| Enhanced-Video | KV1712A-R2 |
| USB with Serial/Audio Support | KV1713A |
| Server Access Modules | |
| for PS/2 | KV1720A |
| for USB | KV1721A |
| for Serial RS-232/V.24 | KV1724A |
| (32) Server Access Modules for PS/2 | KV1720A-32 |
| Dual RJ-45 Server Access Modules with Audio/Serial RS-232 Support | |
| for PS/2 | KV1725A |
| for USB | KV1726A |
| for Sun HD15 | KV1727A |
| **To provide power for up to four KV1724A Server Access Modules, order…** | |
| Power Supply | PS123A |
| **To rackmount a User Station, order…** | |
| 1U Rackmount Kit | RMK171X |
| **To connect remotely to your server room over IP, order…** | |
| ServSwitch Wizard™ IP *(For details, see p. 23.)* | ACR2004A |

# Improve productivity in clinical diagnostic laboratory.

An international provider of diagnostic testing systems for hospitals and large laboratories wanted to help its customers reduce costs and improve their productivity. One targeted improvement was giving technicians working in the lab the ability to monitor different instruments from one workstation instead of physically moving from station to station.

The new system used by the technicians had to require little or no training, and be unobtrusive, easily expandable, and versatile enough to use in different lab configurations. Other requirements included the number of test stations and lab size.

*Giving lab technicians the ability to monitor eight lab stations from one PC test station translates into significant time and money savings.*

## The solution:

To solve the problem, the company called the ServSwitch Central™ team at Black Box, and our techs worked with the customer to evaluate the system challenges.

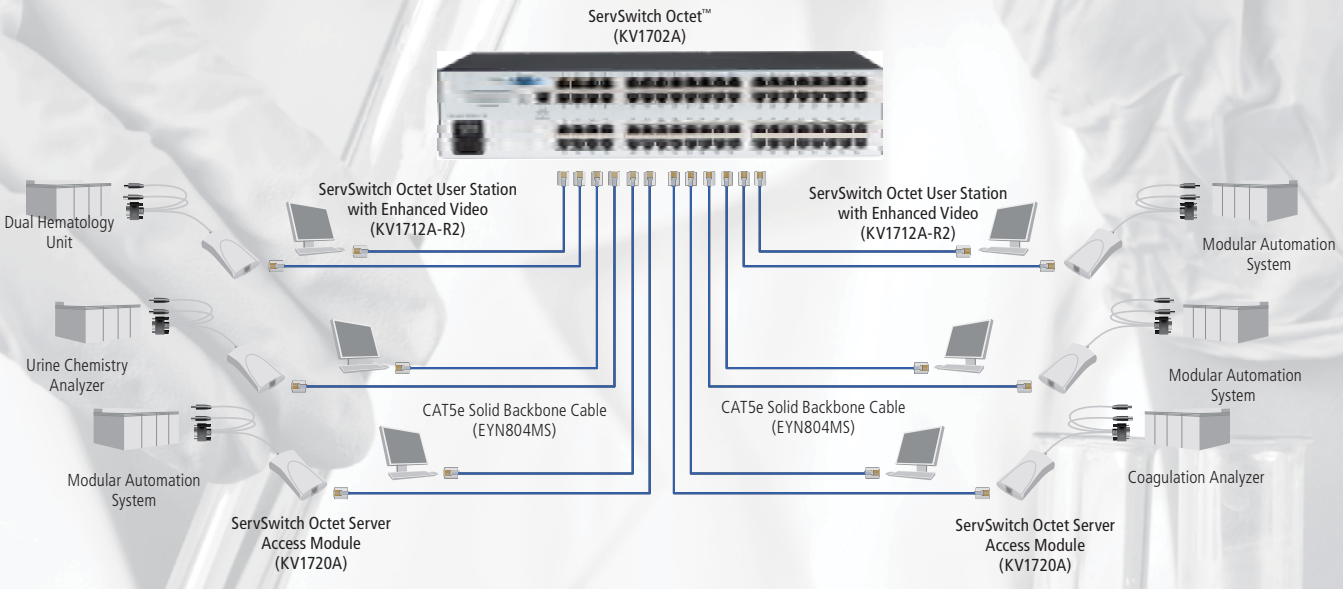
Because the labs typically had one PC for each test station, Black Box immediately suggested a ServSwitch™ solution that would enable a technician to access all the instruments from one test station instead of moving between multiple test stations. Addtionally, lab administrators could easily monitor the status of all the equipment to be sure profits weren't being lost in downtime.

Many tests were run with different ServSwitch KVM switch and cable types. The solution that worked best was the ServSwitch Octet™ (**facing page**). This system features an advanced on-screen display, enables plug-and-play system expansion, and runs on unshielded twisted-pair cable, which keeps cable bundles to a minimum.

The ServSwitch Octet also expands distance limits to 61 meter—which made it perfect for a lab containing stations and test equipment spaced far apart.

We successfully implemented the ServSwitch Octet system, and now technicians can read results from any connected instrument with just a key command instead of getting up and changing stations. This has increased productivity and improved the work environment.

### Modular Automation System with ServSwitch Octet



## ServSwitch CX

# Up to 4 users can access and control 16 or 24 multiplatform servers connected via CATx cable.

- Maximum resolution is 1900 x 1200.
- Ideal for small and mid-size data centers.
- Reset one or more host system power switches via the switch's power control port.
- Supports PS/2 or USB style keyboard and mouse.
- Includes rackmounting hardware.
- ✦✦WARRANTY — 2 Years

### Easier connections than ever!

The ServSwitch™ CX enables up to four users to connect to the switch via CAT5, CAT5e, or CAT6 UTP cable — no bulky KVM cables to deal with. In addition, you can mix and match different kinds of servers on the same CX switch. Just run CATx cables from the switch's server ports to the Server Access Modules (SAMs) that connect to your servers. Simply choose the appropriate SAM for each server and you're all set.

What's more, you can connect the ServSwitch CX to either a PS/2 or USB keyboard and mouse — it includes both connector types.

### Simple server selection.

Whether you're working at a user station or the local analog console port in the server room, you can select a server to access and control via on-screen menus or hotkeys. On-screen menus make server selection simple because you can give each server a name that makes sense to you.

### Sight and sound support.

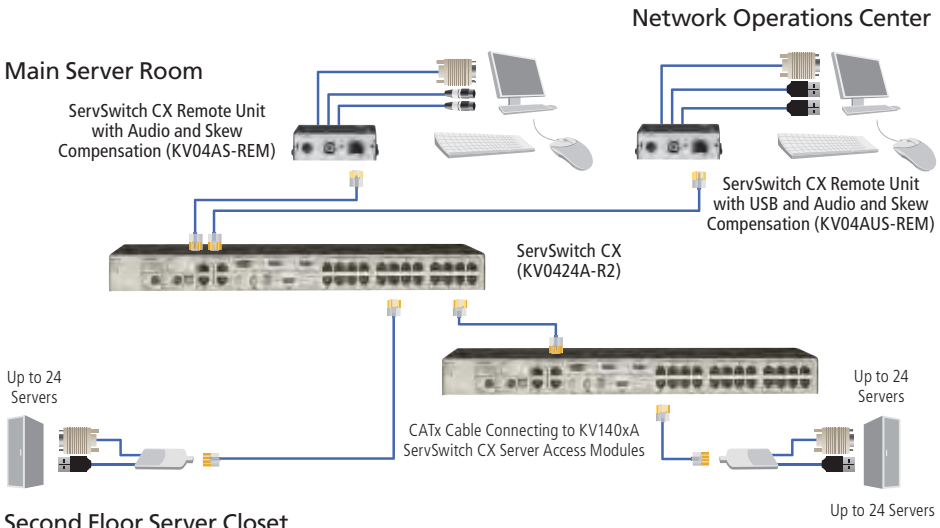
The ServSwitch CX provides super-sharp resolutions up to 1900 x 1200 for all users up to 50 m away. And at up to 300 m away, the CX displays 1024 x 1280 video resolution.

By choosing a SAM with audio, you add support for stereo speakers, enabling you to hear audible alerts.

### Take charge with your power.

The ServSwitch CX has a power control port that enables a remote user to reset one or more power switches in the host system. Plus, dual power connectors enable the CX to draw power from its included wallmount adapter or from a redundant power supply if there's a power failure.

*KV0416A-R2*


Network Operations Center
Main Server Room
ServSwitch CX Remote Unit with Audio and Skew Compensation (KV04AS-REM)
ServSwitch CX Remote Unit with USB and Audio and Skew Compensation (KV04AUS-REM)
ServSwitch CX (KV0424A-R2)
Up to 24 Servers
Up to 24 Servers
CATx Cable Connecting to KV140xA ServSwitch CX Server Access Modules
Up to 24 Servers
Second Floor Server Closet
Third Floor Data Center

## TECH SPECS

**Distance (Maximum)** — 984.2 ft. (300 m)
**Resolution (Maximum)** — 1920 x 1200 @ 164 ft. (50 m)
**CE Approval** — Yes
**RoHS** — Yes
**Power** — 100–240 VAC, 50–60 Hz, autosensing
**Size** — KV0416A-R2, KV0424A-R2:
1.75"H (1U) x 19"W x 8.5"D (4.4 x 48.3 x 21.6 cm)

### Ready right now — and for the future.

The ServSwitch CX comes complete with rackmounting hardware to install the switch in any open 1U of rack space in your server room. The switch can also be flash upgraded, so it's obsolescence-proof.

### Cascadable with the ServSwitch CX with IP

For even greater versatility, you can cascade this switch with its IP-enabled version, the ServSwitch CX with IP (**facing page**).

| Item | Code |
|---|---|
| ServSwitch CX, (1) Local Console Port + (4) Remote CATx User Ports | |
| (16) Servers | KV0416A-R2 |
| (24) Servers | KV0424A-R2 |
| **For each server connection, you need…** | |
| ServSwitch CX Server Access Modules | |
| PS/2 Basic | KV1400A |
| with Audio | KV1402A |
| USB Basic | KV1401A |
| with Audio | KV1403A |
| Sun with Audio | KV1404A |
| **To connect a remote console to any of the switches using CATx cable, order…** | |
| ServSwitch CX Remote Units | |
| PS/2 Basic | KV04-REM |
| with Audio | KV04A-REM |
| with Audio and Skew Compensation | KV04AS-REM |
| USB Basic | KV04U-REM |
| with Audio | KV04AU-REM |
| with Audio and Skew Compensation | KV04AUS-REM |

**FOR OPTIMUM PERFORMANCE,** and a **20% savings,** order…

GigaBase® CAT5e 350-MHz Patch Cable, 4-Pair, Straight-Pinned, PVC, Blue, 10-ft. (3.0-m) EVNSL81-0010
*(For other lengths, colors, or pinnings, see **p. 55**.)*

## ServSwitch CX with IP

# The multiplatform KVM switch that uses CATx cable and has remote IP connectivity.

*KV1424A-R2*

- IP support enables you to access servers remotely.
- Connect one local user, one IP user, and up to two remote users—simultaneously.
- 1600 x 1200 remote resolution with scalable windows.
- Simplify cabling with CAT5, CAT5e, or CAT6 UTP cable.
- Supports PC, Macintosh®, and Sun™.
- Connect PS/2 or USB keyboards and mice.
- Cascade switches to control up to 128 servers.
- ✦✦ WARRANTY — 2 Years

The ServSwitch™ CX with IP may just be our most versatile ServSwitch ever—it has all the features you're looking for to help manage your enterprise network. Like the ServSwitch CX (**page 14**), this model is compatible with all major computer platforms and connects via lightweight, inexpensive twisted-pair cable. But the ServSwitch CX with IP also enables you to access servers across any IP network.

### Reaches as far as your network.

Access and switch remotely between servers over a private intranet or over the Internet. All you need is a Java™ enabled Web browser or VNC client.

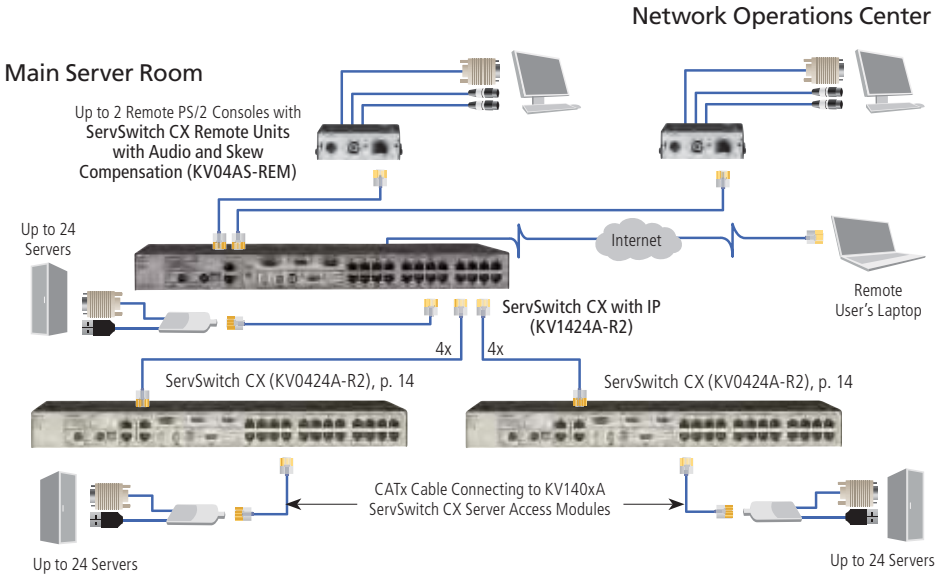
### It's secure, too.

Although the ServSwitch CX with IP can be installed behind the security of your network firewall, it has the robust security features it needs to be safe on its own. Sophisticated 128-bit public/private key protection locks the switch tight against unauthorized access. Two-tier password protection—administrative and non-administrative—adds another layer of security. You can also restrict client IP addresses, limit access to dialup connections only, or use non-standard port numbers to further confound would-be hackers.

### Easier connections than ever!

Connect user stations and servers via lightweight and inexpensive CAT5, CAT5e, or CAT6 UTP cable—no bulky KVM cables

UTP cable provides more distance than KVM cable—you can connect two user stations up to 300 m from the switch. The servers connect with UTP cable, too. At the server end,


Network Operations Center
Main Server Room
Up to 2 Remote PS/2 Consoles with ServSwitch CX Remote Units with Audio and Skew Compensation (KV04AS-REM)
Up to 24 Servers
Internet
Remote User's Laptop
ServSwitch CX with IP (KV1424A-R2)
4x
4x
ServSwitch CX (KV0424A-R2), p. 14
ServSwitch CX (KV0424A-R2), p. 14
CATx Cable Connecting to KV140xA ServSwitch CX Server Access Modules
Up to 24 Servers
Up to 24 Servers
Second Floor Server Closet
Third Floor Data Center

a Server Access Module (SAM) provides keyboard, video, mouse, and speaker connections. Servers may be placed up to 50 m from the switch.

### Get a clear picture.

The ServSwitch CX with IP features effective software-based skew compensation to eliminate the annoying video color drift that can sometimes happen on long UTP cable runs.

### Maximize your control.

Although each ServSwitch CX with IP supports up to 16 or 24 directly connected servers, this is by no means the limit—you can cascade switches to control up to 128 host servers. You can cascade up to three levels deep with servers situated at any level within the cascade tree.

### TECH SPECS

**Distance (Maximum)** — 984.2 ft. (300 m)
**Resolution (Maximum)** — 1920 x 1200 @ 164 ft. (50 m)
**CE Approval** — Yes
**RoHS** — Yes
**Power** — 100–240 VAC, 50–60 Hz, autosensing
**Size** — KV1416A-R2, KV1424A-R2:
1.75"H (1U) x 19"W x 11"D (4.4 x 48.3 x 27.9 cm)

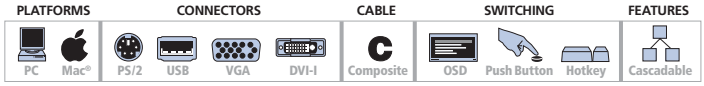
| Item | Code |
|---|---|
| ServSwitch CX with IP, (1) Local Console Port + (2) Remote CATx User Ports + (1) IP User Port + (1) Modem Port | |
| (16) Servers | KV1416A-R2 |
| (24) Servers | KV1424A-R2 |
| **For each server connection, you need…** | |
| ServSwitch CX Server Access Modules | |
| PS/2 Basic | KV1400A |
| with Audio | KV1402A |
| USB Basic | KV1401A |
| with Audio | KV1403A |
| Sun with Audio | KV1404A |
| **To connect a remote console to any of the switches using CATx cable, order…** | |
| ServSwitch CX Remote Units | |
| PS/2 Basic | KV04-REM |
| with Audio | KV04A-REM |
| with Audio and Skew Compensation | KV04AS-REM |
| USB Basic | KV04U-REM |
| with Audio | KV04AU-REM |
| with Audio and Skew Compensation | KV04AUS-REM |

**FOR OPTIMUM PERFORMANCE,**
and a **20% savings,** order…

GigaBase® CAT5e 350-MHz Patch Cable, 4-Pair, Straight-Pinned, PVC, Blue, 10-ft. (3.0-m)
*(For other lengths, colors, or pinnings, see **website**)*
EVNSL81-0010

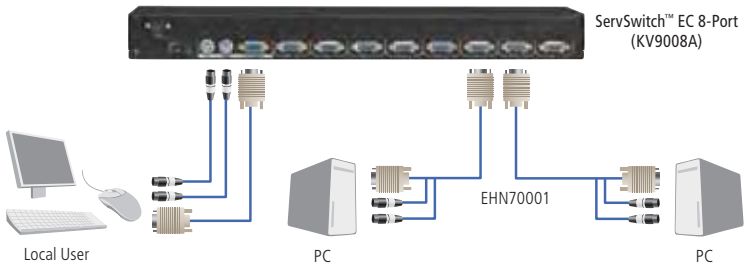
## ServSwitch EC

# Control multiple PS/2 *and/or* USB servers from your desktop—DVI video available too!




- Choose from four versions:
  - Manage up to 16 PS/2 servers and consoles (PS/2 keyboard, PS/2 mouse, and monitor).
  - Manage up to 16 PS/2 and USB servers from a single PS/2 KVM console.
  - Manage up to 16 PS/2 and USB servers from a PS/2 or USB console!
  - new – Manage up to eight USB DVI servers from a USB console with a DVI monitor.
- Resolutions up to 1920 x 1440.
- Cascade up to 136 servers.
- Operating system independent and transparent to all applications.
- Switch servers manually or use autoscan to scan servers sequentially.
- DDC2B compatible for use with the latest digital monitors.
- ✦✦WARRANTY — 1 Year

*KV9216A: top: front; bottom: rear*




Want the option of using either a PS/2 or USB keyboard, mouse, and monitor console to control multiple PS/2 and/or USB servers? The ServSwitch EC makes it possible. We even offer a version for USB consoles with DVI monitors (all other KVM switches in the family support VGA monitor connectivity).

To expand your platform to include additional servers, simply cascade units in a master-slave configuration. Cascade up to 16 servers with the 4-port models, up to 64 servers with the 8-port models, and up to 136 servers with the 16-port models. Because the ServSwitch EC is plug-and-play, you can add or subtract servers almost as quickly as you can plug and unplug cables.

Ideal for areas where you have a limited amount of space, the 1U-high ServSwitch EC can be used on the desktop or mounted in a rack or cabinet. (Brackets are included with the 8- and 16-port models.) To save more space, the KVM circuitry is concentrated in a single connector at the server end. This way, you have fewer cables to install when making server connections.

Switch between servers using front-panel buttons or hotkeys. Or with autoscan, the ServSwitch EC will scan and switch between servers, one by one, at an interval that you determine. When autoscan detects any keyboard or mouse activity, it suspends the scanning until activity stops, and then resumes with the next computer in sequence.

## TECH SPECS

**Cable Length (Maximum)** — At console: 20 ft. (6 m);
At PC ports for PS/2 server: 30 ft. (9.1 m);
At PC ports for USB server: 15 ft. (4.5 m)
**Operating Systems Supported** — Windows® 98/Me/XP®, Windows NT®, Windows 2000, Windows Vista®, Windows 7, Mac OS
**Resolution (Maximum)** — All except KV9508A: 1920 x 1440
KV9508A: 1920 x 1200
**CE Approval** — Yes
**RoHS** — Yes
**Connectors** — Server: KV90XXA, KV91XXA, KV92XXA: (4), (8), or (16) integrated HD15 F;
KV9508A: (8) DVI-I F, (8) USB Type B F;
Console: Keyboard/Mouse: KV90XXA, KV91XXA: 6-pin mini DIN F;
KV9208A, KV9216A: (1) 6-pin mini DIN F;
KV9204A, KV9208A, KV9216A, KV9508A: (2) USB Type A F;
Monitor: All except for KV9508A: (1) HD15 F;
KV9508A: (1) DVI-I F
**Power** — 115 VAC, 60 Hz, external
**Size** — 4-port models: 1.75"H (1U) x 8.6"W x 5.1"D (4.4 x 21.8 x 13 cm);
8- and 16-port models: 1.75"H (1U) x 17.3"W x 7"D (4.4 x 43.9 x 17.8 cm)
**Weight** — 4-port models: 2.2 lb. (1 kg);
All 8-port models except KV9508A: 4.8 lb. (2.2 kg);
KV9508A: 5 lb. (2.3 kg)
16-port models: 5.7 lb. (2.6 kg)

The front panel includes port LEDs, which light with the corresponding active port when you switch between servers.

In addition, all models except for the KV9508A feature on-screen display. Through this OSD, you can assign 14-character server names that make sense to you, view the connection status by port, and lock servers from unauthorized users.

What's more, the ServSwitch EC stores system settings and name entries in nonvolatile memory, and saves your keyboard settings for each server, restoring them when you come back to that machine.

*NOTE: Master units can only cascade to slave units that have the same or fewer number of ports.*

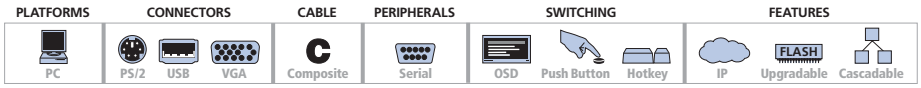
**You can also cascade KV910xA and KV920xA switches with PS/2 only switches (KV900xA).*

***The 4-port model is for USB consoles only.*

| Item | Code |
|---|---|
| ServSwitch™ EC | |
| for PS/2 Servers and Consoles | |
| 4-Port | KV9004A |
| 8-Port | KV9008A |
| 16-Port | KV9016A |
| for PS/2 and USB Servers and PS/2 Consoles* | |
| 4-Port | KV9104A |
| 8-Port | KV9108A |
| 16-Port | KV9116A |
| for PS/2 and USB Servers and PS/2 or USB Consoles* | |
| 4-Port** | KV9204A |
| 8-Port | KV9208A |
| 16-Port | KV9216A |
| new for DVI and USB Servers and DVI and USB Consoles | |
| 8-Port | KV9508A |
| CPU Cable | EHN900024U-0006 |

**For your CPU connections, order…**
ServSwitch EC Server Cable **Page 17**

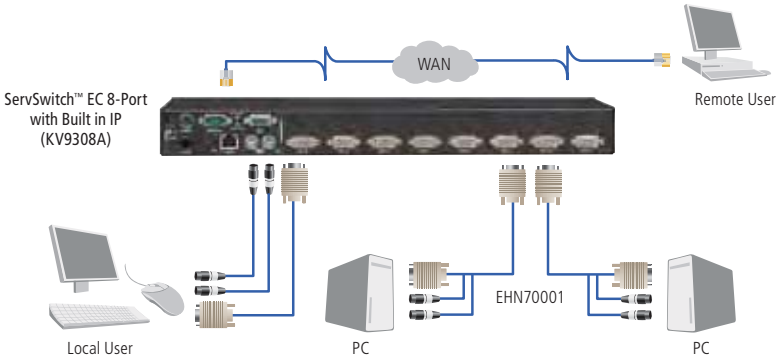
# ServSwitch EC with Built-In IP for PS/2 and USB Servers and PS/2 or USB Consoles




## Economically access and control up to 16 remote servers across an IP network.

- Securely access 4, 8, or 16 servers across any TCP/IP network.
- SSL encryption, SSH tunneling, and RADIUS authentication for security.
- Resolutions up to 1600 x 1200 (local unit); use with PS/2 *or* USB consoles.
- Can be used with any Java™ enabled Web browser or VNC client.
- Support for 16-bit color and real-time remote readings of temperature and voltage levels.
- Manage up to an additional 16 serial devices with optional serial modules.
- ✦✦ **WARRANTY** — 1 Year

*KV9408A: top: front; bottom: rear*




Overcome KVM distance limitations at an economical price by using your Ethernet network and the ServSwitch™ EC with Built-In IP for PS/2 and USB Servers and PS/2 or USB Consoles.

The switch enables you to use your Web browser to easily and securely access and control remote servers across any TCP/IP network as if they were local. You can even use the Internet to manage servers from home or on the road.

And with the new dual-function Reset button, you can perform a power reset or reset all settings back to the defaults.

### Remote or local switching made easy.

The switch works with any Java-enabled Web browser. The ServSwitch EC with Built-In IP is also fully compatible with Virtual Network Computing (VNC) viewers. A VNC connection opens automatically after login. You can also switch from a local workstation using on-screen menus or hotkeys.

### Secure connections and access.

In addition to the usual security features, the switch features an internal firewall that, when enabled, causes the ServSwitch EC to only accept logins from listed hosts.

Plus, easy-to-use menus enable you to set up password-protected user accounts. Users other than the administrator can't make changes to the system but can access the Web interface and log into the VNC console. You can also set user accounts to time out after they've gone unused for a specified amount of time.

### Simple to set up, manage, and cascade.

Simply press the IP Setup button to bring up the new IP On-Screen Display (OSD) feature. It leads you step by step through the setup process so you don't need to study the manual.

When a new firmware version is released, it's easy to upgrade the flash memory. Check your firmware version and update via the simple-to-use on-screen menus.

The ServSwitch EC with Built-In IP integrates easily into your SNMP-managed network. Just use the SNMP menu to configure the switch to be recognized and managed using industry-standard SNMP software.

You can connect an equal-size or smaller non-IP slave unit to a master unit. Once connected, all units automatically configure themselves as master or slaves. The 16-port unit supports up to 136 servers when you cascade eight 16-port units.

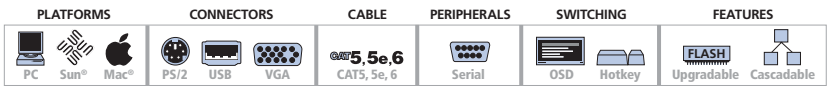
## TECH SPECS

**Resolution (Maximum) — Local:** 1600 x 1200 @ 85 Hz; Remote: 1280 x 1024 @ 85 Hz (16-bit color)
**CE Approval** — Yes
**RoHS** — Yes
**Connectors** —
All: Monitor: (1) HD15 F;
Keyboard: KV930xA-R2: (1) 6-pin mini DIN F; KV940xA: (1) USB Type A;
Mouse: KV930xA-R2: (1) 6-pin mini DIN F; KV940xA: (1) USB Type A
Ethernet: (1) RJ-45;
Serial RS-232 (DTE): (1) DB9 M;
8- and 16-port models: (1) R-port with KV9-SRL module;
Servers: (4), (8), or (16) integrated HD15 F;
Future use: (1) 8-pin mini DIN
**Power** — 115 VAC, 60 Hz, external
**Size** — 4-port models: 1.7"H x 7.3"W x 8.7"D (4.3 x 18.5 x 22.1 cm);
8- and 16-port models: 1.75"H (1U) x 15.9"W x 8.7"D (4.4 x 40.4 x 22.1 cm)

| Item | Code |
|---|---|
| ServSwitch EC with Built-In IP | |
| for PS/2 and USB Servers and PS/2 Consoles | |
| 4-Port | KV9304A-R2 |
| 8-Port | KV9308A-R2 |
| 16-Port | KV9316A-R2 |
| for PS/2 and USB Servers and USB Consoles | |
| 4-Port | KV9404A |
| 8-Port | KV9408A |
| 16-Port | KV9416A |
| **For your server connections, order…** | |
| ServSwitch EC Server Cable | |
| PS/2 6-ft. (1.8-m) | EHN70001-0006 |
| 10-ft. (3.0-m) | EHN70001-0010 |
| 15-ft. (4.5-m) | EHN9000P-0015 |
| 30-ft. (9.1-m) | EHN9000P-0030 |
| USB 6-ft. (1.8-m) | EHN9000U-0006 |
| 10-ft. (3.0-m) | EHN9000U-0010 |
| 15-ft. (4.5-m) | EHN9000U-0015 |
| **To add a serial device (to enable both KVM management with serial console management), order…** | |
| Serial Module | KV9-SRL |

## ServSelect III • ServSelect III VM

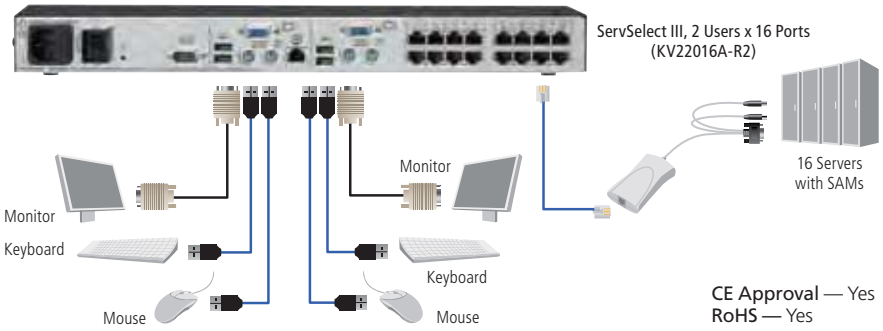
Control up to 256 or 4096 servers, and eliminate bulky cables in your server room.



*KV22016A-R2*

*KV0216A*

- Access up to 16 servers or serial devices with one unit.
- Daisychain multiple units to control up to 256 servers with ServSelect III or up to 4096 servers with ServSelect III VM.
- The ServSelect III VM features built-in virtual media support.
- Maximum video resolution is 1600 x 1200 with a 3-m cable.
- Built-in password protection and keep-alive functionality.
- ✦✦WARRANTY — 1 Year




CE Approval — Yes
RoHS — Yes

With the ServSelect™ III, two users can access up to 16 servers or serial devices. Plus you can cascade up to 16 ServSelect III units to control up to 256 servers! This unit features four USB ports for keyboards and mice.

With the ServSelect III VM, control up to 4096 servers. Plus, with the built-in VM feature, you can now share directly connected USB compatible media storage devices — CDs, flash drives, external hard drives — instead of just connecting to servers. Along with the four USB ports for keyboards and mice, the ServSelect III VM features four virtual media USB ports.

Four operational modes enable you to manage your switching activities. In Scan mode, the switches sequentially display the status of up to 16 servers on-screen. In Broadcast mode, a user can simultaneously control more than one server. In Switch mode, either user can select and share any server at any time. In Share Mode, two users can gain access to a primary server.

Make connections to individual servers with nonflashable ServSelect III Cables. These CATx cables provide keyboard, video, and mouse connectivity.

To connect VT100™, PS/2, or USB servers more than 4.5 m from these ServSelect units, order our ServSelect Server Access Modules (SAMs). The modules "keep alive" even if the unit loses its power. Order one for each switch-to-server connection.

The modules feature built-in KVM connectors. All you need is CATx cable.

### ServSelect III Cable with Integrated Dongle

**Cut cable clutter in your server room!**

*Order one ServSelect III Cable for each switch-to-server connection—the USB or PS/2 KVM connectors are already built in! It's available in three lengths. These cables do not work with VM switches.*

| Item | Code |
|---|---|
| ServSelect™ III | |
| 2 Users x 8 Ports | KV22008A-R2 |
| 2 Users x 16 Ports | KV22016A-R2 |
| ServSelect III VM | |
| 2 Users x 16 Ports | KV0216A |
| **For each server connection less than 15 feet (not for use with VM models) , you need…** | |
| ServSelect III Cables | |
| PS/2 Style ([1] HD15 Male, [2] 6-Pin Mini DIN Male, [1] RJ-45 Male) | |
| 7-ft. (2.1-m) | EHN21000PS2-0007 |
| 10-ft. (3.0-m) | EHN21000PS2-0010 |
| 15-ft. (4.5-m) | EHN21000PS2-0015 |
| USB Style ([1] HD15 Male, [1] USB Type A Male, [1] RJ-45 Male) | |
| 7-ft. (2.1-m) | EHN21000USB-0007 |
| 10-ft. (3.0-m) | EHN21000USB-0010 |
| 15-ft. (4.5-m) | EHN21000USB-0015 |
| **To connect to servers more than 4.5 m away, order…** | |
| ServSelect Server Access Module (SAM) | |
| VT100 Style | KV123A |
| PS/2 Style ([1] HD15 Male, [2] 6-Pin Mini DIN Male) | KV125A |
| USB Style ([1] HD15 Male, [1] USB Type A Male) | KV126A |
| **For servers supporting virtual media, order by keyboard and mouse type…** | |
| ServSelect Virtual Media Modules | |
| USB Style ([1] RJ-45 Male, [1] USB Type A Male) | KV124A-USB |
| PS/2 Style ([1] RJ-45 Male, [2] 6-Pin Mini DIN Male, [1] USB Type A Male) | KV124A-PS/2 |
| **You may also need…** | |
| Power Supply for VT100 Server Access Module | PS123A |

## ServSelect IP VM

### Up to 4 remote users can control up to 16 servers and 4 media storage devices from anywhere in the world!

- Virtual media support enables you to transfer data between connected media devices and servers!
- Available for two or four IP users.
- ✦✦WARRANTY — 2 Years

With the ServSelect™ IP VM, up to four authorized remote users can access and control up to 16 multiplatform servers from anywhere in the world — and they can also attach USB media storage devices to ***any server*** connected to the switch with a Virtual Media Module!

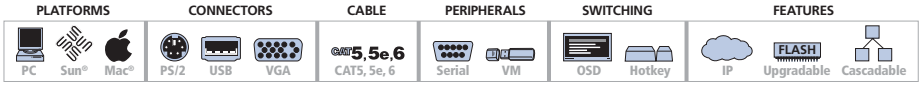
In addition to the ports for IP access, both ServSelect IP VM models are equipped with an analog port on the local side for traditional KVM switching functions. The local user can also transfer data between connected servers and USB media storage devices such as CDs, flash drives, and external hard drives.

To connect VT100™, PS/2, or USB servers, order a ServSelect Server Access Module (SAM) for each switch-to-server connection. Powered by its connected server, each module **(facing page)** "keeps alive" if the switch loses power. Link your ServSelect IP VM to SAMs with CAT5 cable.

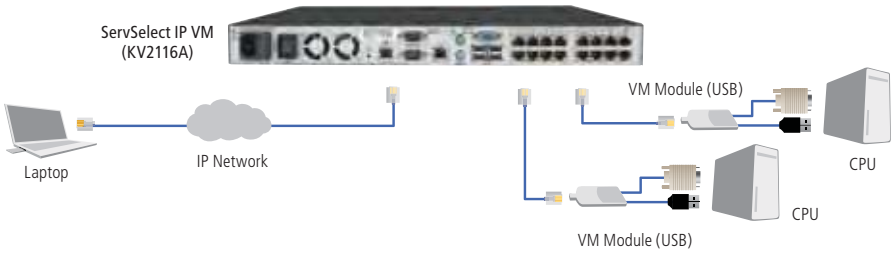
To access the ServSelect IP VM as well as all attached systems remotely, load the included software or connect to the unit's IP address with a Web browser. Four operational modes enable you to manage your switching activities: Scan, Broadcast, Share, and Switch.

Protect your system with a screen-saver password for each user, so screen-saving mode can only be unlocked by typing a password.

To control more than 16 servers put the ServSelect IP VM at the top of a switching tier of ServSelect III VM switches (**facing page**), up to four users can connect to up to 4096 servers and devices.



*KV2116A: top: front view; bottom: rear view*




### TECH SPECS

**Distance (Maximum) — 100 feet (30.5 m)**
**Peripherals Supported** — IBM® Scrollpoint® mouse, Kensington® Expert mouse, Logitech™ Mouseman+®, Marble Plus and Marble FX mice, Microsoft® IntelliMouse® (PS/2 only), USB and PS/2 style keyboard and mouse
**Resolution (Maximum)** — Local: 1600 x 1200; Remote: 1280 x 1024 @ 75 Hz (Distance and environmental conditions may affect resolution)
**Servers Supported** — USB; IBM PC, PS/2, and compatibles; also VT100 with corresponding Server Access Module
**User Consoles Supported** —
Software: PC running ServSelect IP VM console application and Windows NT 4.0, Windows® 2000, Windows XP, Windows Vista®, Windows 7;
Minimum configuration: 300-MHz Pentium® III, 64 MB RAM, 100BASE-T NIC, XGA video;
Recommended configuration: 450-MHz Pentium III, 128 MB RAM, 100BASE-T NIC, SXGA video
**Video Supported** — VGA
**CE Approval** — Yes
**RoHS** — Yes
**Connectors** — Digital ports: (1) RJ-45 for (2) or (4) remote users;
Analog ports: (2) 6-pin mini DIN F (PS/2), (1) HD15 F (VGA);
USB media devices: (5) USB 2.0 Type A F;
Servers: (16) RJ-45;
Configuration port: (1) DB9 F (serial RS-232);
Power: (1) IEC 320
**Power** — 100–240 VAC, 50–60 Hz, autosensing
**Size** — 1.75"H (1U) x 17"W x 11"D (4.4 x 43.2 x 27.9 cm)
**Weight** — 7.3 lb. (3.3 kg)

| Item | Code |
|---|---|
| ServSelect™ IP VM | |
| for (2) Digital Users over IP + (1) Analog Port, (4) USB Ports, and (16) Server Ports | KV2116A |
| for (4) Digital Users over IP + (1) Analog Port, (4) USB Ports, and (16) Server Ports | KV4116A |
| For servers supporting virtual media, order by keyboard and mouse type… | |
| ServSelect Virtual Media Modules | |
| USB Style ([1] RJ-45 Male, [1] USB Type A Male) | KV124A-USB |
| PS/2 Style ([1] RJ-45 Male, [2] 6-Pin Mini DIN Male, [1] USB Type A Male) | KV124A-PS/2 |

## Black Box Explains

### Virtual media.

A virtual media (VM) device is any type of data storage device—such as CDs, flash drives, or external hard drives—that you can connect to remotely to enable data sharing. A ServSwitch with built-in VM can be directly connected to USB media storage devices to enable sharing these devices with all servers connected to the switch.

For example, if you connect a USB flash drive to a VM-enabled ServSwitch, you can transfer data back and forth between the flash drive and any server connected to the switch. And because you don't have to connect the flash drive to each individual server, you save time performing file transfers, patches, and diagnostics. Additionally, if the ServSwitch device is IP-enabled, USB media devices can be attached to any server on the switch, as in an application using the ServSelect IP VM.

Also by combining KVMoIP technology with VM switching, you don't need physical access to your servers to fix problems. If you need to apply a patch or fix a corrupted file, you can map a drive on your laptop directly to the server.

## ServSwitch CX Uno

### High-end, multiplatform KVM switching over CATx cabling with remote access capabilities.

PLATFORMS: PC, Sun™, Mac® | CONNECTORS: USB, VGA | CABLE: CAT5, 5e, 6 | PERIPHERALS: Speaker | SWITCHING: OSD, Push Button, Hotkey, Serial | FEATURES: FLASH Upgradable, Cascadable

*KV0161A*

*KV04U-REM*

- Set up CATx-based local and remote KVM access to 8 or 16 CPUs or servers—switch from a KVM console up to 300 meter away.
- Supports resolutions up to 1920 x 1200 at 60 Hz and offers DDC EDID display support.
- Slim and compact. Connect to as many as 31 cascaded servers in 1U of rack space.
- Switch remotely using RS-232 commands and set up synchronized switching of multiple units—great for multi-head video applications.
- Available with stereo audio support, too.
- Assign three levels of users for access security.
- ✦✦ **WARRANTY** — 2 Years

**CE Approval** — Yes except RMK2004 and RMK2004-2
**RoHS** — Yes except RMK2004 and RMK2004-2

| Item | Code |
|---|---|
| ServSwitch™ CX Uno | |
| 8-Port | KV0081A |
| 16-Port | KV0161A |
| 19" Rackmounting Kit 1U for | |
| Single Unit | RMK2004 |
| Two Units | RMK2004-2 |
| **To link CPUs up to 10 m away over CATx, order a SAM for each connection…** | |
| ServSwitch CX Server Access Modules (SAMs) | |
| PS/2 | KV1400A |
| USB | KV1401A |
| PS/2 with Audio | KV1402A |
| USB with Audio | KV1403A |
| Sun® with Audio | KV1404A |
| **For remote CPU/server access up to 300 m away over CATx, order…** | |
| ServSwitch CX Remote Access Modules | |
| PS/2 | KV04-REM |
| USB | KV04U-REM |
| PS/2 with Audio | KV04A-REM |
| USB with Audio | KV04AU-REM |
| PS/2 with DeSkew and Audio | KV04AS-REM |
| USB with DeSkew and Audio | KV04AUS-REM |

## ServSwitch Panther

### The entry-level ServSwitch that uses UTP cables.

PLATFORMS: PC | CONNECTORS: PS/2, USB, VGA | CABLE: CAT5, 5e, 6 | SWITCHING: OSD, Push Button, Hotkey | FEATURES: FLASH Upgradable, Cascadable

- Connect to 8 or 16 computers via low-cost CATx cable and control them all from a single KVM console with this inexpensive switch.
- Cascade multiple 16-port units to control up to 256 computer CPUs or servers.
- Extend the distance between a CPU and your KVM console up to 10 meter.
- Rackmountable 1U height.
- PS/2 and USB SAMs simplify connections. Order one for each CPU/server you want to control.
- Hot swappable! Reconnect CPUs without rebooting.
- ✦✦ **WARRANTY** — 2 Years

### TECH SPECS

**Distance (Maximum)** — 33 ft. (10 m)
**Resolution (Maximum)** — 1600 x 1200 @ 75 Hz
**CE Approval** — Yes
**RoHS** — Yes
**Connectors** — KV1108A: System: (1) RJ-45;
Computer: (8) RJ-45;
Local KVM: (1) HD15 F, (2) 6-pin mini DIN F;
KV1116A: System: (1) RJ-45;
Computer: (16) RJ-45;
Local KVM: (1) HD15 F, (2) 6-pin mini DIN F
**Power** — 85–265 VAC. 50/60 Hz
**Size** — 1.6"H x 8.5"W x 4.8"D (4.1 x 21.6 x 12.2 cm)
**Weight** — 2.2 lb. (1 kg)

*KV1108A*

| Item | Code |
|---|---|
| ServSwitch Panther | |
| 8-Port | KV1108A |
| 16-Port | KV1116A |
| ServSwitch Panther Server Access Modules (SAMs) | |
| PS/2 | KV1120A |
| USB | KV1121A |

## ServSelect III

### Access and control eight servers—using any platform—over CAT5 cable.

PLATFORMS: PC, Sun™, Mac® | CONNECTORS: PS/2, USB, VGA | CABLE: CAT5, 5e, 6 | PERIPHERALS: Serial | SWITCHING: OSD, Hotkey | FEATURES: FLASH Upgradable, Cascadable

* *NOTE: Screen resolution varies by distance: 800 x 600 at 15.2-m, 1024 x 768 at 8.5-m, and 1280 x 1024 at 3-m.*

*NOTE: For legacy Sun Video®, you may also need an adapter. To order, see* ***page 18****.*

- Supports console-to-CPU/server connections as far as 15.2 meters*.
- Get optimal 1280 x 1024 resolution with a 3 meter cable.
- Switch between and reboot all servers from the console user station.
- Daisychain units to control up to 128 servers!
- Password protection and keep-alive features.
- ✦✦ **WARRANTY** — 1 Year

### TECH SPECS

**Resolutions** — 800 x 600 @ 50 feet (15.2 m);
1024 x 768 @ 28 feet (8.5 m);
1280 x 1024 @ 10 feet (3 m)
**CE Approval** — Yes
**RoHS** — Yes

| Item | Code |
|---|---|
| ServSelect™ III | |
| 1 User x 8 Ports | KV21008A-R2 |
| **For each server connection, you'll need…** | |
| ServSelect III Cables | **See p. 18.** |
| **For server links beyond 4.5-m, order…** | |
| Server Access Modules (SAMs) | **See p. 18.** |

## Black Box Explains

### KVMoIP access technology.

KVMoIP access technology extends keyboard, video, and mouse (KVM) signals from any computer or server over TCP/IP via a LAN, WAN, or Internet connection. Through this KVM over IP (KVMoIP) connection, remote users can access and control a number of servers simultaneously from wherever they are, inside or outside the organization, and anywhere in the world. This technology works in diverse hardware environments and is ideal for managing multilocation data centers and branch offices.

These capabilities translate into real savings for companies having to deal with the proliferation of servers in many offices, particularly for corporations and government agencies required to deliver 24/7 uptime and real-time access to mission-critical servers 365 days a year.

KVMoIP products combine the advantages of remote access software with the benefits of KVM switching technology. Like most KVM switches, KVMoIP products don't require any software to be loaded on the host computers. They interface directly with the keyboard, monitor, and mouse connectors of the host computer or KVM switch. Circuitry within the KVMoIP device digitizes the incoming video signal and processes it into digital data that is communicated to a viewer program running on a remote client computer over a LAN/WAN or the public Internet.

By addressing network issues from a remote location, you can simply manage issues from your desk, or even save yourself the hassle of traveling to a site in the middle of the night. Use a browser-based connection, even a cell phone or PDA, to reboot or administer a roomful of servers remotely—a real convenience.

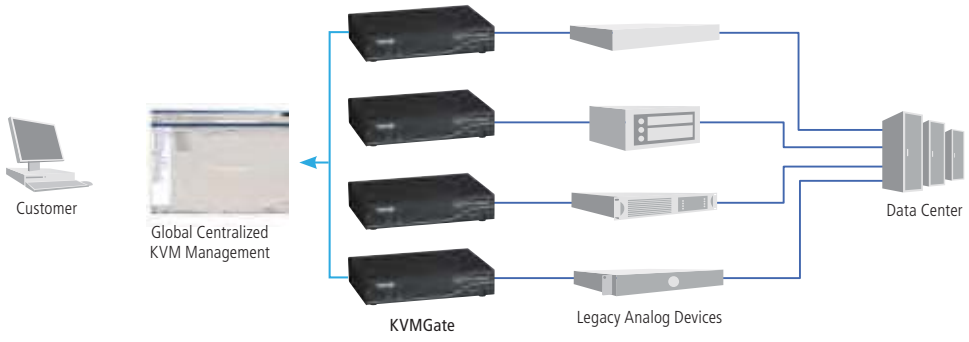
KVMoIP products that feature virtual media technology take that convenience further. They enable a remote user to effortlessly move files from a mass storage device—a USB flash drive or CD-ROM drive, for instance—from your location to the computer on which you're working. Cost savings are realized through reduced downtime and less travel. Plus, in some cases, there's no to need replace existing KVM switches with proprietary ones to get a KVMoIP server-control solution.

### The Black Box difference.

Black Box® ServSwitch™ KVMoIP solutions go further than many other KVMoIP products on the market. They not only enable you to access remote servers, but they do this at the BIOS level—important when you go need to troubleshoot from off-site and don't want to a dispatch a technician. Install or recover software applications and install OS patches from your location anywhere in the world. Plus, this BIOS-level control is possible regardless of the server's brand or model and even works if the operating system is down.

For more information on Black Box KVMoIP solutions, visit **blackbox.nl/videos**. Find out more by watching a KVMoIP demo.

### The importance of vendor-neutral global centralized KVM management.




*Installation of the ServReach global centralized KVM server management system enables you to keep devices that are working for you.*

# Making the friendly skies Down Under even friendlier.

AirServices Australia is a government-owned corporation providing safe and environmentally sound air traffic control management and related air-side services to the aviation industry.

AirServices Australia needed a KVM solution for their multiple-source, multiple-destination data center. The solution had to interface with a broad range of standards for keyboard, monitor, and mouse configurations.

*Improving system connectivity in the control room with the ServSwitch Octet™ helped AirServices Australia improve customer safety.*

## The solution:

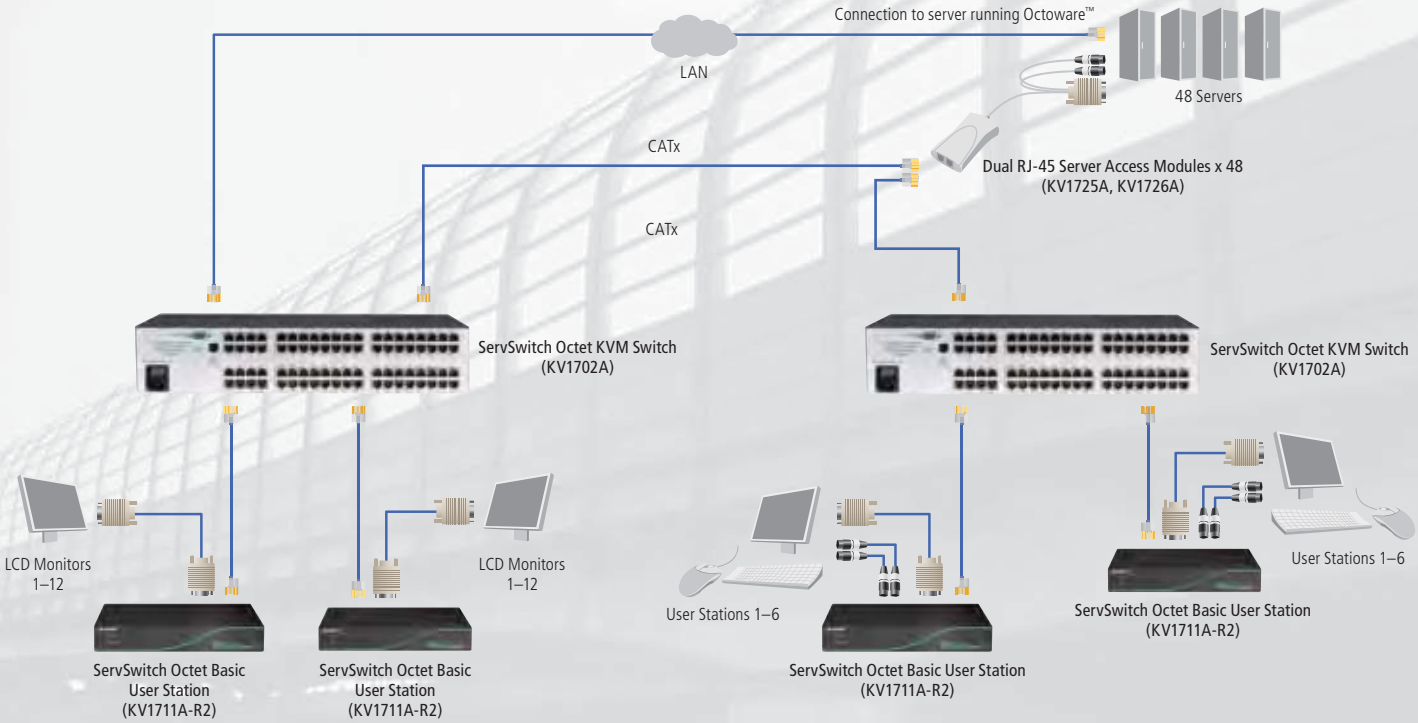
The command center had 48 servers in one room, six users in the control room, with access to the 48 servers, and 12 LCDs in the control room. Supervisors needed to switch between each server and show video of the servers on the LCD screens via IP.

After a vendor and product assessment, AirServices Australia decided Black Box Network Services Australia was the only vendor that could provide the KVM products to fully satisfy all the requirements. After-sales support was another major consideration, and AirServices Australia's previous experience with Black Box in that area had always been excellent.

Black Box technicians and the technical staff at AirServices Australia worked together to deploy a solution using an interconnected mixture of ServSwitch Octet units, user stations, and server access modules (SAMs).

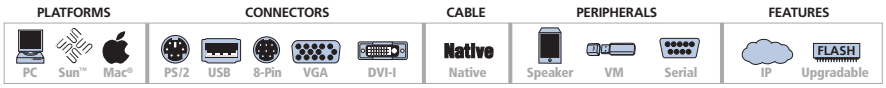
Craig Nixon, an analyst in Service Delivery Support at AirServices Australia, says, "The system performance through 12 months has been very good. If any technical issues arise, Black Box has been quick to provide assistance and resolve any problems."

The client was so pleased, it implemented the Octet configuration at another airport and also had excellent results.



# ServSwitch Wizard IP
# ServSwitch Wizard IP Plus

## Add IP connectivity to your existing KVM switch or a single computer.




- Access an attached ServSwitch™ and all servers connected to it via an IP network or dialup connection.
- Plus model includes USB, DVI-I, and audio connectors for data and sound.
- No software needed.
- Remotely reboot after a power crash.
- True DDC support.
- Easy on-screen display for fast setup.
- ✦✦ **WARRANTY** — 2 Years

*Connect the Wizard IP (**above**) to just about any other ServSwitch product as well as IBM® compatible, Sun™, or Mac® servers. The updated firmware enables you to use either a PC or Mac computer to view connected servers from a remote location.*

The ServSwitch Wizard™ IP from Black Box enables you to remotely access an attached ServSwitch and all servers connected to it from anywhere in the world via an IP network or a dialup connection. No special software is needed on the controlled servers. Unlike software-only remote access solutions, the ServSwitch Wizard IP provides full control — even during bootup.

Up to four simultaneous remote users can view the ServSwitch Wizard IP, although only one user has complete control. You can connect all users via its RJ-45 network port or link one of four remote users via its modem/ISDN DB9 port. You can also use the DB9 port as a backup access route should the network fail.

The ServSwitch Wizard IP and Plus contain an embedded VNC server, which you can access securely using a VNC viewer or a browser running Java. No extra software seat licenses are needed. Private or shared access modes are supported from up to four viewers.

With the Plus version, you get all the features of the Wizard IP but with a faster (533-MHz) processor and better video performance, making it ideal for high-end server rooms. The Virtual Media feature enables you to remotely make files available to any host computer linked to the Plus.

The Plus has USB, DVI-I, and audio connectors for streaming data and sound to a remote virtual network collaborator (VNC).

**CE Approval** — Yes
**RoHS** — Yes

| Item | Code |
|---|---|
| ServSwitch Wizard IP | ACR2004A |
| ✦ Includes (1) ServSwitch Wizard IP, (1) power supply, (1) CD-ROM, and (4) self-adhesive rubber feet. | |
| ServSwitch Wizard IP Plus | ACR2005A |
| ✦ Includes (1) ServSwitch Wizard IP Plus, (1) power supply, (1) CD-ROM, and (4) rubber feet. | |

### To rackmount your ServSwitch Wizard IP and IP Plus, order...

| | |
|---|---|
| ServSwitch Wizard IP Rackmount Kits | |
| Single Unit | RMK2004 |
| Dual Units | RMK2004-2 |

## Black Box Explains

### KVM IP gateways.

Just as a gate serves as an entry or exit point to a property, a gateway serves the same purpose in the networking world. It's the device that acts as a network entrance or go-between for two or more networks.

There are different types of gateways, depending on the network. An application gateway converts data or commands from one format to another. A VoIP gateway converts analog voice calls into VoIP packets. An IP gateway is like a media gateway, translating data from one telecommunications device to another.

Gateways often include other features and devices, such as protocol converters, routers, firewalls, encryption, voice compression, etc. Although a gateway is an essential feature of most routers, other devices, such as a PC or server, can also function as a gateway.

A KVMoIP switch contains an IP gateway, which is the pathway the KVM signals use to travel from the IP network to an existing non-IP KVM switch. It converts and directs the KVM signals, giving a user access to and control of an existing non-IP KVM switch over the Internet.

## Buyer's Guide | Desktop KVM

For product details, see the page listed or go to **blackbox.nl**.

| No. of Users | No. of CPUs | Console User | | CPU Platform Keyboard/Mouse | | Video | | Audio | Switching Method | | | Code | Product Name |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PS/2 | USB | PS/2 | USB | VGA | DVI | | Front Panel | Hotkey Command | Autoscan | | |
| 1 | 2 | • | — | • | — | • | — | — | • | • | • | KV7022A | ServSwitch DT Basic II, **p. 35** |
| 1 | 2 | • | — | • | • | • | — | — | • | • | • | SW651A | ServSwitch Wizard™ |
| 1 | 2 | — | • | — | • | • | — | — | • | — | • | KV812A | ServSwitch USB |
| 1 | 2 | • | • | — | • | • | — | — | • | • | • | KV822A | ServSwitch USB Plus |
| 1 | 4 | • | — | • | — | • | — | — | • | • | • | KV7024A | ServSwitch DT Basic II, **p. 35** |
| 1 | 4 | — | • | — | • | — | • | • | • | — | • | KV9604A | ServSwitch DT DVI, **p. 33** |
| 1 | 4 | — | • | — | • | — | • | • | • | • | • | KV9614A | ServSwitch DT DVI, **p. 33** |
| 1 | 4 | • | — | • | • | • | — | — | • | • | • | SW652A | ServSwitch Wizard™ |
| 1 | 4 | — | • | — | • | • | — | — | • | — | • | KV814A | ServSwitch USB |
| 1 | 4 | • | • | — | • | • | — | — | • | • | • | KV824A | ServSwitch USB Plus |

| No. of Users | No .of CPUs | Console User | | CPU Platform Keyboard/Mouse | | Video | | User Console Video | | | Switching Method | | Code | Product Name |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PS/2 | USB | PS/2 | USB | VGA | DVI | Single | Dual | Quad | Hotkey Command | Autoscan | | |
| 1 | 2 | — | • | — | • | — | • | — | • | — | • | • | KV9622A | ServSwitch DT Dual-Head DVI USB, **p. 32** |
| 1 | 2 | • | — | • | — | — | • | • | — | — | • | • | KV1002A-R2 | ServSwitch Wizard DVI |
| 1 | 2 | • | — | • | — | — | • | — | • | — | • | • | KV1022A-R2 | |
| 1 | 2 | • | — | • | — | — | • | — | — | • | • | • | KV1042A-R2 | |
| 1 | 2 | • | — | • | • | • | — | — | • | — | • | • | SW614A | Multihead ServSwitch |
| 1 | 2 | • | — | • | • | • | — | — | — | • | • | • | SW616A | |
| 1 | 2 | • | • | • | • | • | — | • | — | — | • | • | KV7020A | ServSwitch DT Pro II, **p. 34** |
| 1 | 2 | • | — | • | — | — | • | • | — | — | • | • | KV9502A | ServSwitch DT Series, DVI, **p. 34** |
| 1 | 4 | — | • | — | • | — | • | — | • | — | • | • | KV9624A | ServSwitch DT Dual-Head DVI USB, **p. 32** |
| 1 | 4 | • | — | • | — | — | • | • | — | — | • | • | KV1004A-R2 | ServSwitch Wizard DVI |
| 1 | 4 | • | — | • | — | — | • | — | • | — | • | • | KV1024A-R2 | |
| 1 | 4 | • | — | • | — | — | • | — | — | • | • | • | KV1044A-R2 | |
| 1 | 4 | — | • | — | • | — | • | • | — | — | • | • | KV2004A | ServSwitch Wizard DVI Dual-Link, USB, **p. 30** |
| 1 | 4 | • | — | • | • | • | — | — | • | — | • | • | SW617A | Multihead ServSwitch |
| 1 | 4 | • | — | • | • | • | — | — | — | • | • | • | SW619A | |
| 1 | 4 | • | • | • | • | • | — | • | — | — | • | • | KV7021A | ServSwitch DT Pro II, **p. 34** |
| 1 | 4 | • | — | • | — | — | • | • | — | — | • | • | KV9504A | ServSwitch DT Series, DVI, **p. 34** |
| 1 | 8 | — | • | — | • | — | • | • | — | — | • | • | KV2008A | ServSwitch Wizard DVI Dual-Link, USB, **p. 30** |

| No. of Users | No .of CPUs | Console User | | CPU Platform Keyboard/Mouse | | Video | | User Console Video | | | Switching Method | | Code | Product Name |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PS/2 | USB | PS/2 | USB | VGA | DVI | Dual | Tri | Quad | Hotkey Command | Multilayered | | |
| 1 | 4 | — | • | — | • | — | • | • | — | — | • | • | KV2204A | ServSwitch Wizard DVI Dual-Link with True USB Emulation, **p. 31** |
| 1 | 4 | — | • | — | • | — | • | — | • | — | • | • | KV2304A | |
| 1 | 4 | — | • | — | • | — | • | — | — | • | • | • | KV2404A | |

## Black Box Explains

### TEMPEST standard and Common Criteria (EAL4+)

Common Criteria (EAL4+) defines a common set of tests regarding the process of the design, testing, verification, and shipping of new security products. Common Criteria enables customers to assess a level of trust in how a product has been designed, tested, built, and shipped.

TEMPEST testing, while classified, is regarded as a process that assesses the threat of data linking by various covert electromagnetic eavesdropping mechanisms. The TEMPEST designation is often required by military organizations. TEMPEST, as a security standard, pertains to technical security countermeasures, standards, and instrumentation that prevent or minimize the exploitation of vulnerable data communications equipment by technical surveillance or eavesdropping.

Both testing standards are important, they just test for different things.

**TEMPEST-Secure KVM Switches**

For 2 or 4 ports, with USB, and DVI-I or VGA the ServSwitch Secure KVM Switch with USB (**page 26**) provides control and separation of up to four PCs connected to secure and unsecure networks through just one keyboard, monitor, and mouse.

- High port-to-port electrical isolation, which facilitates data separation (RED/BLACK).
- NSA tested and TEMPEST approved for and by the U.S. Air Force.
- The low radiated emissions profile meets the appropriate national requirements for conducted/radiated electromagnetic emissions.
- Switches are permanently hard wired, preventing access from one CPU to the others or access from one network to others.
- External tamper-evident seals make it easy to spot attempted tampering.
- Channel-to-channel 60-dB crosstalk isolation protects against signal snooping, so software tools and applications cannot be used to access any connected computer from another connected computer.
- Users can safely switch among as many as four computers operating at different classification levels.

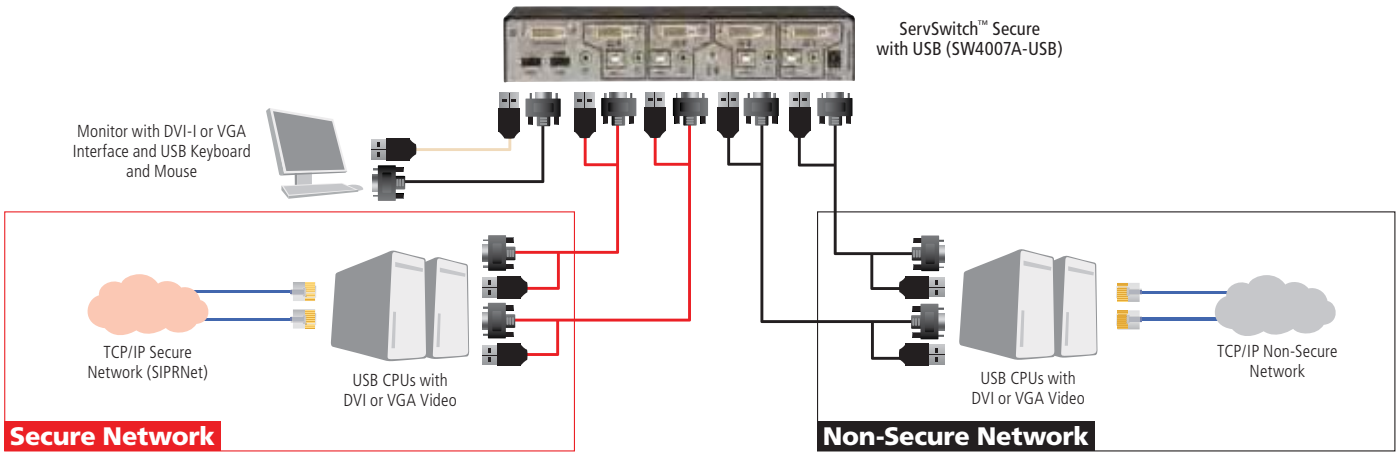
**Common Criteria Evaluation Assurance to Level 4+**

A newly developed switch, the ServSwitch Secure with USB and DVI, or VGA, or VGA and a Card Reader (**pages 28-29**), is being evaluated for Common Criteria Evaluation Assurance to Level 4+ (EAL4+).

Common Criteria is an international standardized process for information technology security evaluation, validation, and certification. The Common Criteria scheme is supported by the National Security Agency through the National Information Assurance Program (NIAP).

The ServSwitch Secure with USB surpasses the security profiles of most other KVM switches. Along with the tamper-evident seals and other security features already mentioned, ServSwitch Secure KVM Switch with USB models feature these security measures:

- The flow of keyboard and mouse data is unidirectional, so it's not possible for the computer to send data along the keyboard and mouse signaling channels.
- Keyboard and mouse devices can only be enumerated at the keyboard and mouse ports. Any other USB peripherals connected to these ports will be prohibited from operating, preventing, for example, a USB thumb drive from uploading or downloading unauthorized data.
- At each channel switchover, the USB host controller circuit, which controls shared peripherals, erases its entire RAM. This prevents residual data from remaining in the channel after a channel change and being transferred to another computer.
- Every time the channel is changed, shared USB peripherals are powered down, reset, and re-enumerated.
- Every time the channel is changed, the USB host controller is also powered down and reset, further ensuring no transfer of residual data.
- Dedicated DDC bus and EDID memory emulation at each port prevent the shared monitor link from being used as a covert attack channel.
- With only one selection button per channel, the ServSwitch Secure models enable direct and unambiguous channel selection.
- Hotkey and mouse switching are excluded, preventing remote control of the switch.
- Ports are powered through the computer's USB ports, while the shared keyboard, mouse, and monitor are powered by the switch's power supply. The lack of a common power supply minimizes electronic signaling.
- The switches with card readers have additional features, including active authentication verification and active tamper detection.

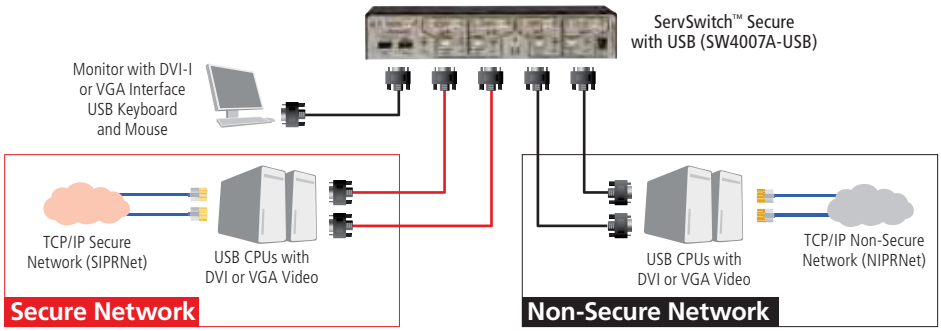


## ServSwitch Secure KVM Switches with USB

Secure KVM switch with 2 or 4 ports, USB and DVI-I.

| PLATFORMS | | | CONNECTORS | | CABLE | PERIPHERALS | SWITCHING |
|---|---|---|---|---|---|---|---|
| PC | Sun™ | Mac® | USB | DVI-I | Native | Speaker | Push Button |

- Supports digital resolution up to 1600 x 1200 and analog up to 1920 x 1440.
- All microprocessors are One Time Programmable (OTP) with no flash ROM.
- Shielded, secure metal casing is electrically bonded to ensure low electromagnetic emissions for minimized snooping risks.
- High levels of port isolation prevent data leakage.
- Unexpected operations (signaled by the ERR indicator) cause channel isolation and require you to find the fault and reboot the unit.
- Each USB port is powered independently—shorting the supply on one port doesn't switch off power to other ports.
- Unidirectional keyboard and mouse signaling via data diodes ensures that USB data cannot leak back through the switch.
- DVI-I video provides exact video quality and is backwards compatible with analog VGA equipment.
- Digital DVI-I video signals are differential, DC balanced, and encoded.
- True DDC video support. For highly secure installations, DDC data can be bypassed or disabled.
- Tamper-evident seals and screws.
- ✦✦ **WARRANTY** — 2 Years


ServSwitch™ Secure with USB (SW4007A-USB)
Monitor with DVI-I or VGA Interface USB Keyboard and Mouse
TCP/IP Secure Network (SIPRNet)
USB CPUs with DVI or VGA Video
Secure Network
USB CPUs with DVI or VGA Video
TCP/IP Non-Secure Network (NIPRNet)
Non-Secure Network

| Item | Code |
|---|---|
| ServSwitch™ Secure with USB, TEMPEST-Approved* | |
| 2-Port | SW2007A-USB |
| 4-Port | SW4007A-USB |
| ServSwitch Secure Plus with USB | |
| 4-Port, CAC Reader | SW4007A-USB-PLUS |
| For connections to a DVI-I monitor, order… | |
| ServSwitch DVI Cable | |
| 6-ft. (1.8-m) | EHN900024U-0006 |
| 10-ft. (3.0-m) | EHN900024U-0010 |
| Shielded Audio Cable for ServSwitch Secure | |
| 9-ft. (2.7-m) | EJ4007-0009 |

*NOTE: For TEMPEST approval* questions or documents, call our FREE Tech Support.*

*NOTE: For VGA applications, adapters are required: FA461 for monitors or FA462 for computers.*

**CE Approval** — Yes
**RoHS** — Yes


## This may be a Big Book, but Black Box on-line is even *BIGGER*!

There you'll find:

- **KVM switches**, extenders, trays, and more!
- **Information galore!** Black Box Explains tutorials, Buyer's Guides, white papers, videos.
- **Savings.** Find weekly specials and savings on featured ServSwitch KVM products.

If you still can't find what you need, just ask the experts at our FREE Tech Support hotline.

# Taking secure KVM switching to the highest level.

As the need for security has grown, Black Box has made it a priority to address the concerns of customers for whom security is the first priority. Whether it's biometric products or remote monitoring equipment, we have striven to stay at the forefront of secure product development.

Some of our biggest customers have been military and governmental security officers who have brought their needs to our attention. (Due to the confidential nature of their posts, we are unable to identify them by name.) In the realm of KVM switching, developing a truly secure switch has been Black Box's goal for some time now. With the line of ServSwitch™ Secure KVM Switches with USB, we are finally able to bring to the market products that meet security needs at the local, state, and federal levels.

*Security officers know that Black Box Network Services is the place to turn to meet their secure switching needs.*

## The solution:

The KVM switching technology concerns of the security market are fairly straightforward. They are looking for USB keyboard and mouse support, USB CAC reader support, digital video support, and TEMPEST and EAL4+ testing. Switches that have been previously available either do not meet the correct security criteria or do not perform well enough to attach to mission critical equipment.

Most of the available technology in the market was security-tested based on what was commercially available. (For details about TEMPEST and EAL4+ certification, see our Black Box Explains on **page 25**.) Exceptions had been made both on security accreditation and overall quality. Black Box is engineering KVM switches specifically for this market. They pass all security criteria testing and are of high quality.

According to one of our customers who is familiar with our ServSwitch Secure switches, Black Box switches perform the best and have the longest lifespan. Some of his switches are eight years old, and others he has had to retire due only to the fact that the computer technology has developed (into USB and DVI capabilities, for example).

His current dependence on the SWx007A-USB products needs to be augmented with a switch that includes a common access card (CAC) reader. As a result, Black Box is bringing to market the SWx009A-USB-EAL (**page 29**) with VGA and Card Reader. It is undergoing TEMPEST and EAL4+ testing to make it the most secure CAC available.

TEMPEST is vital for areas where physical security is either not possible or limited. Electronic eavesdropping is a huge problem when dealing with sensitive data and user credentials. By replicating common attack methods, security personnel have found them to be effective for gaining sensitive information.

When equipment is on a vehicle or deployed in an active zone, use of TEMPEST-rated equipment is a must when sensitive data is involved. It can be a user's only line of protection. EAL4+ is typically used in environments where multiple physical security layers are already in place. This design is used primarily to protect data between various security levels of networks.

In military and government IT setups, the most common segregation between secure and non-secure networks is RED/BLACK: the separation between non-classified Internet protocol router networks (NIPRNet) and secret Internet protocol router networks (SIPRNet). This level of segregation applies to anyone who has secret security clearance and also works on the public Internet. He or she would be working on two computers with different network credentials. A security officer's concern would be that someone could type in a password or data stored in the KVM switch and then release it to an unsecured network by accident. Black Box secure switches prevent this. (For more threat/solution scenarios, see **pages 28-29**.)

## ServSwitch Secure KVM Switches with USB

# Combat security threats with these EAL4+ tested

The new ServSwitch Secure KVM Switches with USB are in EAL4+ certification testing and TEMPEST approved (except SW2008A-USB-EAL and SW4008-USB-EAL). They surpass the security profiles of most other KVM switches. These new switches are being evaluated for Common Criteria Evaluation Assurance to Level 4+ (EAL4+). Common Criteria is an international standardized process for information technology security evaluation, validation, and certification. The Common Criteria scheme is supported by the National Security Agency through the National Information Assurance Program (NIAP).

The ServSwitch Secure KVM Switches with USB provide control and separation of up to four PCs connected to secure and unsecure networks through just one keyboard, monitor, and mouse. Users can safely switch among as many as four computers operating at different classification levels without worry.

Features include:

- High port-to-port electrical isolation, which facilitates data separation (RED/BLACK).
- The low radiated emissions profile meets the appropriate national requirements.
- Switches are permanently hard wired, preventing access from one CPU or network to the others.
- External tamper-evident seals.
- Channel-to-channel 60-dB crosstalk isolation protects against signal snooping.
- Support DVI-I video, which is DC balanced and may be encoded for security.
- Provide robust isolation between networks, so they're ideal for government applications that access classified networks in addition to public networks such as the Internet.
- ✦✦ WARRANTY — 2 Years

RoHS — Yes

### Why ServSwitch Secure KVM Switches with USB?

1. Prevent data leaking between ports and to the outside world.
2. Prevent sensitive data from being stored in the device.
3. Prevent electronic snooping.

Common Criteria

TEMPEST

## Threats/Solutions

### 1. Prevent data leaking between ports and to the outside world.

**Threat:** Microprocessor malfunction or unanticipated software bugs cause data to flow between ports.

**Solution:** Unidirectional keyboard and mouse data flow is enforced by hardware "data diodes" so data isolation doesn't rely on software integrity. This makes it impossible for the computer to send data along the keyboard and mouse signaling channel. This advanced design also ensures data isolation through hardware and prevents the keyboard and mouse interfaces from becoming covert computer-to-computer signaling channels because of software holes or unanticipated bugs.

In addition, keyboard and mouse devices can only be enumerated at the keyboard and mouse ports. Any other USB peripherals, such as a USB thumb drive, will be inhibited from operating, preventing any uploading or downloading of data.

**Threat:** Physical proximity between ports enables data leakage.

**Solution:** Isolation is improved by placing the red and black ports at the opposite edges of the switch.

**Threat:** Accidental port switching.

**Solution:** Locked-down operation disables all keyboard hotkey and mouse switching functions in both software and hardware so that data corruption can't inadvertently cause an unanticipated channel change. The only way to change the channels is with the front-panel keys. There is only one button per channel, so channel selection is clear. Color-coded visual feedback confirms the channel selection.

**Threat:** Signaling by shorting the power supply or loading the power.

**Solution:** Each port is independently powered by its USB port. Shorting the power supply on one port will not cause the power on the other ports to be switched off. The shared keyboard, mouse, and monitor circuitry are powered by the power supply. The lack of a common power supply minimizes electronic signaling.

**Threat:** Detection of signals on one computer by monitoring for crosstalk (leakage) signals on another computer.

**Solution:** Minimum crosstalk separation of 60 dB provided between signals from one computer and input or I/O signals to another. There are no connections to sensitive analog inputs, such as computer microphone ports. Microphone circuitry enables sensitive recording of small analog signals. Even very low crosstalk levels could be recorded and act as a means by which a non-selected computer could read data being sent to another computer.

**Threat:** Timing analysis attacks (looking at what happens on one port to determine data flow patterns on another).

**Solution:** Only one computer is connected at a time to any shared circuitry. Links are unidirectional, preventing timing analysis.

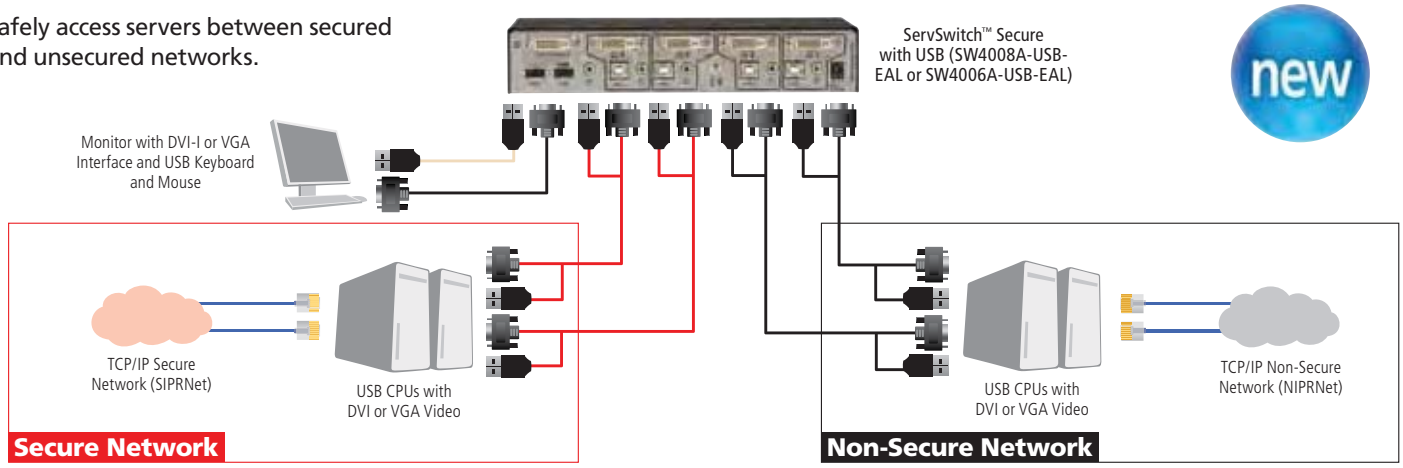
**Threat:** Electromagnetic emissions.

**Solution:** Special low emissions cables are used to minimize radiated electromagnetic signal leakage. Filtered power connections minimize emissions down the power lines.

# and TEMPEST-approved switches.

PLATFORMS: PC, Sun®, Mac® | CONNECTORS: USB, DVI-I | CABLE: Native | PERIPHERALS: Speaker | SWITCHING: Push Button

Safely access servers between secured and unsecured networks.


ServSwitch™ Secure with USB (SW4008A-USB-EAL or SW4006A-USB-EAL)
Monitor with DVI-I or VGA Interface and USB Keyboard and Mouse
TCP/IP Secure Network (SIPRNet)
USB CPUs with DVI or VGA Video
Secure Network
USB CPUs with DVI or VGA Video
TCP/IP Non-Secure Network (NIPRNet)
Non-Secure Network

new

### 2. Prevent data from being stored in the device.

**Threat:** Data transfer by means of common storage or common RAM.

**Solution:** Shared circuitry and the keyboard and mouse are powered down at each channel change to clear all volatile memory of any previous connections. This erases the entire RAM, preventing residual data from remaining in the channel and being transferred to another computer. In addition, the USB host controller and the shared USB peripherals are also powered down, reset, and re-enumerated. This ensures no residual data transfer.

### 3. Prevent electronic snooping.

**Threat:** Subversive snooping by detecting electromagnetic radiation emitted from the equipment.

**Solution:** The shielded metal case features double shielding in critical areas and a low emissions profile to thwart eavesdropping.

**Threat:** Physically tampering with the switch.

**Solution:** The switch is designed with tamperproof seals to be fitted over the countersunk screws.

Black Box Explains TEMPEST and EAL, p. 25.

| Item | | Code |
|---|---|---|
| ServSwitch Secure KVM Switch with USB, in CC Evaluation (EAL4+) | | |
| DVI | 2-Port | SW2008A-USB-EAL |
| DVI | 4-Port | SW4008A-USB-EAL |
| ServSwitch Secure KVM Switch with USB, TEMPEST-approved, in CC Evaluation (EAL4+) | | |
| VGA | 2-Port | SW2006A-USB-EAL |
| | 4-Port | SW4006A-USB-EAL |

## ServSwitch Secure KVM Switch with USB, VGA, and Card Reader

Get all the benefits of the ServSwitch Secure plus CAC support.

new

These switches offer all the benefits of ServSwitch Secure KVM Switches with USB and more. If someone tries to tamper with the switch, you'll know it. The special Common Access Card (CAC) reader on this switch enhances its functions and gives you even more fail-safe security features.

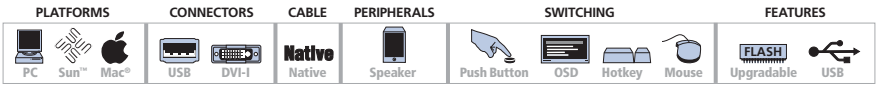
- Because this switch features a Common Access Card (CAC) reader, it meets the requirements of the Dept. of Homeland Security Presidential Directive 12 (HSPD-12).
- Active authentication verification enables you to verify that you have an authentic unit and to check the internal tamper detection circuits.
- Active tamper detection will permanently disable the operation of the switch if tampering is detected. It also denies subsequent authentication attempts.
- ✦✦ WARRANTY — 2 Years

RoHS — Yes

| Item | | Code |
|---|---|---|
| ServSwitch Secure KVM Switch with USB, VGA, and Card Reader, TEMPEST-Approved, in CC Evaluation (EAL4+) | | |
| | 2-Port | SW2009A-USB-EAL |
| | 4-Port | SW4009A-USB-EAL |

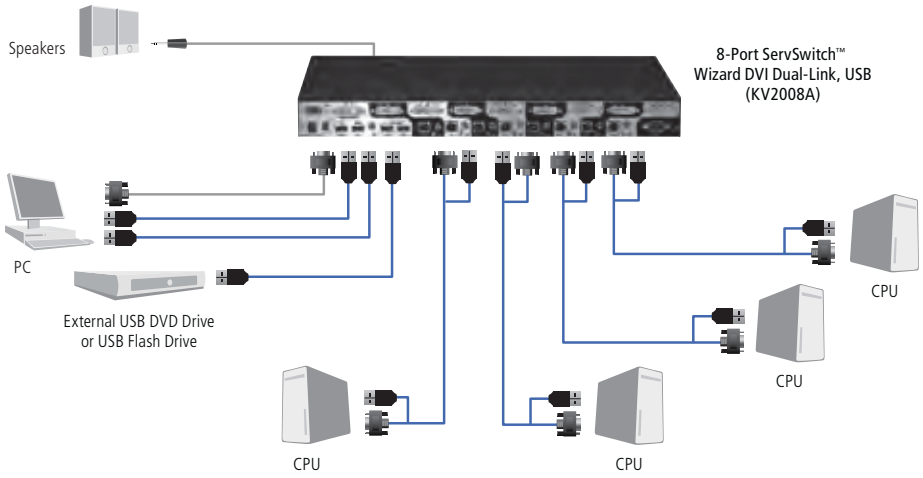
## ServSwitch Wizard DVI Dual-Link, USB

### Share high-end video and any four USB peripherals between eight workstations.




- Supports resolutions up to 2560 x 1600 at 60 Hz.
- True DDC EDID support.
- Up to eight PCs can be switched via hotkey, mouse, or RS-232/V.24.
- Supports dual-link DVI-D, single-link DVI-D, and VGA.
- Can be switched synchronously with other ServSwitch Wizard switches via the options port.
- Stereo audio switches independently from the video signal.
- ✦✦ **WARRANTY** — 2 Years

*KV2008A (top: front; bottom: rear)*




ServSwitch Wizard™ DVI Dual-Link, USB, 4-Port or 8-Port KVM switches feature True USB Emulation technology, which ensures that the full characteristics of the connected USB peripherals—including keyboards and mice—are passed to every system concurrently, so specialized features are quickly recognized on the attached devices. What's more, each computer retains this information, even if the device is plugged into another computer. Because of this technology, the switch avoids many of the limitations found in traditional emulations, enabling instantaneous switching and hotkey support.

You can switch up to four or eight PCs via hotkeys, mouse, or RS-232/V.24. The switch provides resolutions up to 2560 x 1600 Hz at 60 Hz. Plus, it supports dual-link DVI-D and single-link DVI-D.

### Intelligent options port

Flash upgrade the Wizard DVI Dual-Link, USB via its intelligent options port. You can also switch it via simple RS-232 protocol or even dry contacts. When linked with another ServSwitch Wizard, the options port can be used for synchronous switching of multiple video heads.

### USB 2.0 transparency

A clever architecture combines transparent USB 2.0 protocol with emulated keyboard and mouse control. To support this, there are two dedicated keyboard/mouse ports on the switch's console port plus two USB 2.0 transparent ports for any USB 2.0 peripherals.

### TECH SPECS

**CE Approval** — Yes
**RoHS** — Yes
**Video** — DVI dual-link: 2560 x 1600 @ 60 Hz
DVI single-link: 1920 x 1200 @ 60 Hz
VGA: 1920 x 1200 @ 60 Hz
**Connectors** — (1) barrel jack (Power); (9) DVI-I F; (1) VGA HD15 F; (8) USB Type B F; (8) 3.5-mm audio jacks; (4) USB Type A F; (1) DB9 M options port
**Power** — External: 100–240 VAC/5 VDC 6A
**Size** — 1.7"H x 19"W x 8.7"D (4.4 x 48.3 x 22 cm)
**Weight** — 5.5 lb. (2.5 kg)

| Item | Code |
|---|---|
| ServSwitch Wizard DVI Dual-Link, USB* | |
| 4-Port** | KV2004A |
| 8-Port | KV2008A |
| **You may also need…** | |
| Spare Power Supply | |
| 100–240 VAC/5 VDC 6A | PS650 |
| ServSwitch CPU Cables | |
| 6-ft. (1.8-m) | EHN900024U-0006 |
| 10-ft. (3.0-m) | EHN900024U-0010 |
| 15-ft. (4.5-m) | EHN900024U-0015 |
| DVI-I M to VGA (HD15 F) Adapter | FA461 |
| DVI-I F to VGA (HD15 M) Adapter | FA462 |
| 3.5-mm Stereo Audio Cable | |
| 10-ft. (3-m) | EJ110-0010 |

** NOTE: Wizard DVI Dual-Link does not convert video formats.*

*** NOTE: This model does not support an OSD.*

## ServSwitch Wizard DVI Dual-Link with True USB Emulation

# High-end DVI KVM switching for multiple dual-head computers and USB devices.

- A flexible, professional-grade KVM switch for high-performance, multihead KVM switching.
- Enables a single user to control four computers fitted with dual-head, tri-head, or quad-head video and share USB peripherals between them.
- Supports access to two, three, or four video heads on each channel. Switch DVI video, keyboard, and mouse streams to multiple CPUs.
- ✦✦ WARRANTY — 2 Years

*KV2204A (front)*

*KV2404A (rear)*

### Intelligent options port

This highly flexible KVM switch centralizes and simplifies high-end, multihead video switching access at a single user console with multiple DVI screens.

Plus, with advanced support for multiple high-speed USB devices, the ServSwitch Wizard DVI Dual-Link with True USB Emulation serves today's busy multitaskers quite well.

It's ideal for IT administrators and medical imaging, graphic design, and broadcast studio professionals who not only require quick, reliable access to multiple computer CPUs and multiple video channels, but also need simultaneous access to a mix of USB peripherals.

Select a channel on the ServSwitch Wizard DVI Dual-Link using hotkeys, a three-button mouse, or the switch's front-panel controls. When autoscan is enabled, the switch cycles between connected computers in sequence automatically. A seven-segment numeric display indicates the selected channel.

### Multihead video channel access—simplified.

The ServSwitch Wizard DVI Dual-Link enables a single KVM workstation user to control four separate computer systems or servers and flexibly share peripherals among them.

In addition to multihead DVI-I video KVM user console inputs for multiscreen workstations, the switch features dual, triple, or quad DVI-I video connectors on each of its four computer channels. This way, you have easy access to two, three, or four video heads on each channel. For VGA support, see the ServSwitch Wizard VGA, USB models (KV3X04A series).

Each video head channel on this high-quality switch supports dual-link digital DVI video at up to 450 megapixels per second. Plus, it supports high resolutions, whether you need 2048 x 1080 video for post-production type work or 2560 x 1600 (WQXGA) image clarity for very detailed medical or R&D lab imaging. Want to use VGA video instead of DVI? Simply add DVI-to-VGA adapters.

In addition to multiple video connectors, each computer channel on the ServSwitch Wizard Dual-Link DVI has USB Type B and a 3.5-mm audio jack inputs.

### Multicomputer and multiperipheral access.

This high-performance, multimedia switching platform offers more than just straight switching between four multihead computer systems. You can also use a KVM console to work on one computer while your favorite USB devices remain connected to other computers, all easily accessible to you. And because the ServSwitch Wizard DVI Dual-Link supports audio connectivity, you can connect speakers to yet another computer (audio can be switched independently from USB and video).

The ServSwitch Wizard Dual-Link DVI's rear panel has two USB Type A ports as part of its KVM user console connections plus separate switched USB Type A ports for additional USB 2.0 connectivity. You can reassign any of the connected USB peripherals to any of the connected computers quickly. Attached devices can either be switched in unison, or you can mix peripherals between any of the systems.

The switch supports a wide range of USB devices, especially high-speed USB 2.0 peripherals on its switched USB ports. Printers, scanners, and non-standard HID devices can all be attached. For instance, you can be creating e-mails on one system, listening to audio on a second one, printing from a third computer, and scanning documents on a flash drive—all at the same time.

### TECH SPECS

**CE Approval** — Yes
**RoHS** — Yes
**Connectors** — KVM user console:
Video: KV2204A: (2) dual-link DVI-I;
KV2304A: (3) dual-link DVI-I;
KV2404A: (4) dual-link DVI-I;
Keyboard/mouse: (2) USB Type A (emulated);
Audio: (1) 3.5-mm stereo jack;
Switched USB: (2) USB Type A (USB 2.0, not emulated);
Computer channels: Per **each** of its (4) channels:
Video: KV2204A: (2) dual-link DVI-I;
KV2304A: (3) dual-link DVI-I;
KV2404A: (4) dual-link DVI-I;
Keyboard/mouse: (1) USB Type B;
Audio: (1) 3.5-mm stereo jack;
Serial option/flash upgrade port: (1) RJ-45 10P10C (RS-232), for syncing control with second KVM switch or for flash upgrades
**Power** — Input: 100–240 VAC, 50–60 Hz; Output: 5 VDC, 2 A
**Size** — 3.94"H (2.5 U) x 10.24"W x 5.9"D (10 x 26 x 15 cm)
**Weight** — 2.1 lb. (0.95 kg)

### What's included

- ServSwitch Wizard DVI Dual-Link with True USB Emulation KVM switch unit
- AC power adapter
- CD-ROM with user manual
- (4) self-adhesive rubber feet

| Item | Code |
|---|---|
| ServSwitch Wizard DVI Dual-Link Switches with True USB Emulation | |
| Dual-Head | KV2204A |
| Tri-Head | KV2304A |
| Quad-Head | KV2404A |
| ServSwitch Wizard VGA, USB | |
| Single-Head Video | KV3004A |
| Dual-Head Video | KV3204A |
| Tri-Head Video | KV3304A |
| Quad-Head Video | KV3404A |

## ServSwitch DT Dual-Head DVI USB

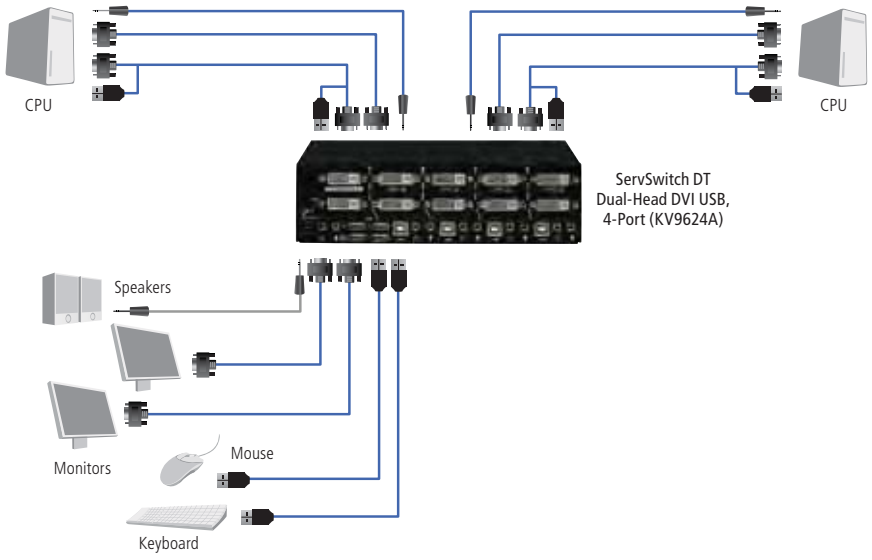
These two- or four-port KVM switches provide the ultimate in multimedia and USB switching.

- Access, control, boot, and reboot multiple dual-head, USB-enabled multimedia computers using one USB keyboard, monitor, and mouse.
- Supports digital resolutions up to an impressive 2560 x 1600.
- Also sends VGA analog video, supporting resolutions of 2048 x 1536.
- USB 2.0 device hub ports for high-speed USB device sharing.
- Multilayered switching.
- Support DDC2B emulation.
- Choose from autoscan intervals of 3, 8, 15, and 30 seconds.
- ✦✦ WARRANTY — 1 Year

The ServSwitch DT Dual-Head DVI USB KVM Switch enables you to control two or four multimedia computers. The switch supports digital resolutions up to 2560 x 1600 for sharp video plus stereo audio. The switch also supports analog video resolutions up to 2048 x 1536. Plus, the switch is compatible with DVI flat screens.

In addition to multimedia capabilities, this Dual-Head DVI USB KVM switch features four USB ports. The device hub port supports USB 1.1 or 2.0 high-speed device sharing. The switch is truly plug-and-play with DDC2B emulation.

The switches also support multilayered switching. For more information on this technology, see page 5.



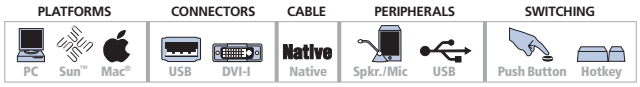

### TECH SPECS

**Operating Systems Supported** — Windows® 95/98/Me/XP, Windows NT, Windows 2000, Windows Vista®, Windows 7, Mac® OS
**Resolution (Maximum)** — HDTV: 1080p;
DVI-D: 1920 x 1200;
Bandwidth: 1.5 Gbps
**CE Approval** — Yes
**RoHS** — Yes
**Connectors** — CPU side: Video: (4) or (8) DVI-I;
USB: (2) or (4) USB Type B;
Audio: (4) or (8) 3.5-mm stereo jacks;
Console side: Video: (2) DVI-I;
USB workstation/device sharing: (4) USB Type A;
Audio: (2) 3.5-mm stereo jacks
**Power** — 5 VDC, 2 A
**Size** — 2.5"H x 8.7"W x 5.1"D (6.4 x 22 x 13 cm)

| Item | Code |
|---|---|
| ServSwitch DT Dual-Head DVI USB | |
| 2-Port | KV9622A |
| 4-Port | KV9624A |
| **For your CPU keyboard mouse and primary video connections, order...** | |
| ServSwitch DT Series CPU Cables | |
| 6-ft. (1.8-m) | EHN900024U-0006 |
| 10-ft. (3.0-m) | EHN900024U-0010 |
| 15-ft. (4.5-m) | EHN900024U-0015 |
| **...then for secondary video, order...** | |
| DVI-D Male to DVI-D Male Cables *(For details, see **website**)* | |
| 6-ft. (1.8-m) | EVNDVI02-0006 |
| 10-ft. (3.0-m) | EVNDVI02-0010 |
| 15-ft. (4.5-m) | EVNDVI01-0015 |
| **For audio, order...** | |
| Audio Cables *(For details, see **website**)* | |
| 5-ft. (1.5-m) | EJ110-0005 |
| 10-ft. (3.0-m) | EJ110-0010 |

## ServSwitch DT DVI with USB

Switch PCs with single-link DVI-D video and either transparent USB 2.0 or emulated USB keyboard/mouse.




- Switch up to four PCs.
- Supports resolutions up to 1920 x 1200 at 60 Hz.
- DDC EDID support via emulation.
- USB 2.0 transparent version supports peripherals via a built-in hub.
- Keyboard/mouse emulation makes switching faster and more reliable.
- Hotkey switching.
- ✦✦ WARRANTY — 1 Year

### Multilayered, desktop switching with high-quality DVI-D video

This four-port USB KVM switch enables you to access four CPUs with high-resolution DVI video connectors from a single workstation. Set up desktop KVM switching with high-quality DVI-D video. For more on multilayered switching, see "Hot KVM Technologies" on **page 5**.

The ServSwitch DT DVI Series supports full DVI at resolutions up to 1920 x 1200 at 60 Hz. You can fine tune the signals, depending on signal strength.

### Transparent USB 2.0

Switch DVI-D and audio signals with transparent USB 2.0 signals via push buttons. A built-in hub supports up to four USB peripherals.

### Emulated USB for keyboard and mouse

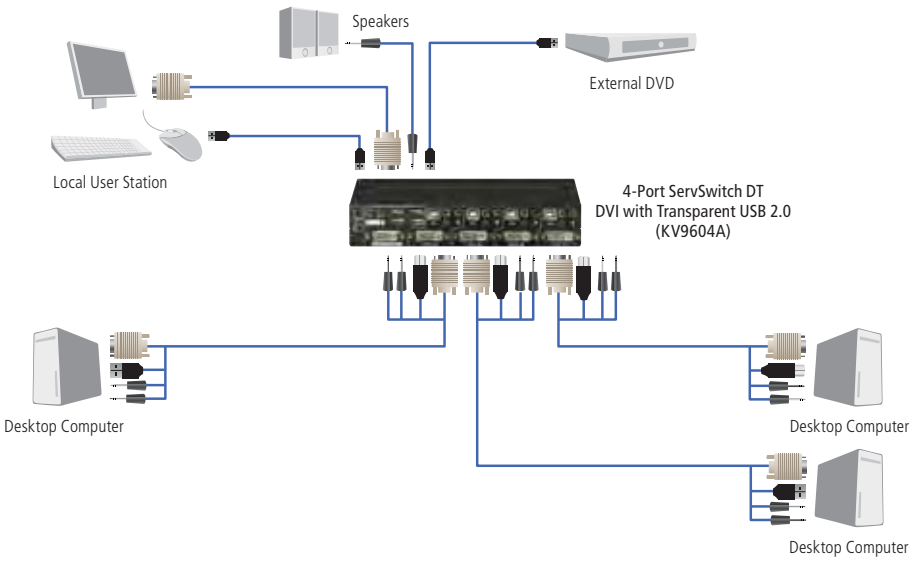
For easy hotkey switching, the KV9614A is the right choice. It supports USB keyboard and mouse devices only.

Emulation means unselected computers continue to see the identities of the keyboard and mouse, which means that no enumeration is necessary when their link becomes active once again. This not only helps to make reconnecting faster, it also increases switching reliability. This is important because USB links are at their most vulnerable during the switching process.

A 2-port model with emulated USB keyboard and mouse is also available. It supports DVI-D only.

### Stereo audio support

Both models support stereo audio signal switching for speakers and microphones. Audio channels can be switched independently from USB and video.




### TECH SPECS

**Resolution** — KV9604A, KV9612A: 1600 x 1200 @ 60 Hz;
KV9614A: 1900 x 1200 @ 60 Hz
**Supported Operating Systems** — KV9604A: Windows® 98 SE/Me/2000/XP, and Windows Vista®, Windows 7;
KV9612A, KV9614A: Windows® 98 SE/Me/2000/XP, Windows Vista®, Windows 7, Mac OS X, Linux®
**User Controls** — KV9612A: (2) port buttons, (1) port select button, (1) function button;
KV9604A, KV9614A: (4) port buttons (labeled 1–4) also used for scan time buttons and autoscan, (1) function button
**CE Approval** — Yes
**RoHS** — Yes
**Power** — *From the interface or via a 5-VDC, 2-A power supply (included)*
**Size** — KV9612A: 1.6"H x 4.9"W x 2.8"D (4 x 16 x 7 cm);
KV9604A, KV9614A: 1.7"H x 8.7"W x 5.1"D (4.4 x 2.2 x 13 cm)
**Weight** — KV9612A: 1.5 lb. (0.7 kg)
KV9604A, KV9614A: 2.2 lb. (1 kg)

| Item | Code |
|---|---|
| ServSwitch DT DVI, 4-Port | |
| with Transparent USB 2.0 | KV9604A |
| with Emulated USB Keyboard/Mouse | |
| 2-Port | KV9612A |
| 4-Port | KV9614A |
| **You may also need…** | |
| ServSwitch DT Series CPU Cables | |
| 6-ft. (1.8-m) | EHN900024U-0006 |
| 10-ft. (3.0-m) | EHN900024U-0010 |
| 15-ft. (4.5-m) | EHN900024U-0015 |
| Audio Cables *(For details, see **website**)* | |
| 5-ft. (1.5-m) | EJ110-0005 |
| 10-ft. (3.0-m) | EJ110-0010 |

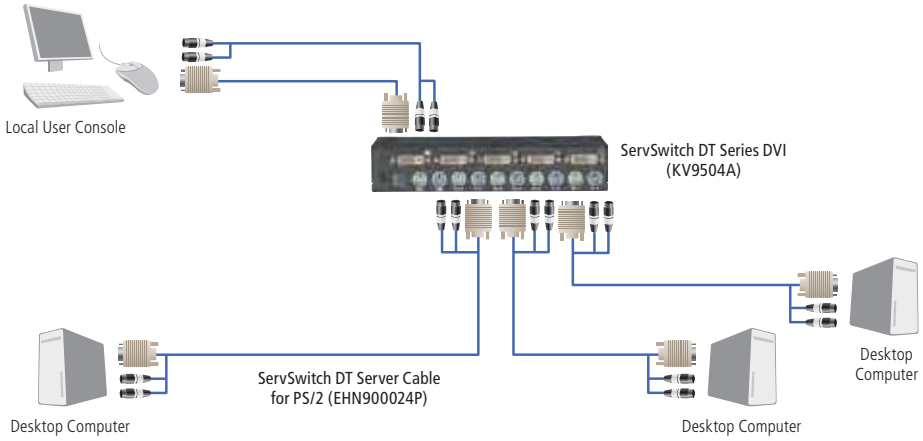
## ServSwitch DT Series DVI

### ServSwitch convenience *plus* DVI quality!

PLATFORMS: PC | CONNECTORS: PS/2, DVI-I | CABLE: Native | SWITCHING: Push Button, Hotkey

- Control two or four PS/2 computers with one PS/2 keyboard, PS/2 mouse, and DVI monitor.
- Supports all standard VESA resolutions from 640 x 480 to 1600 x 1200.
- Autoscan function for port scanning at 3-, 8-, 15-, or 30-second intervals.
- Operating system independent, making it transparent to all applications and hardware.
- Saves the keyboard states for each channel as you switch between CPUs.
- ✦✦ WARRANTY — 1 Year

**CE Approval** — KV9502A, KV9504A
**RoHS** — Yes



*KV9502A: top: front view;*
*KV9504A: middle: front view;bottom: rear view*

| Item | Code |
|---|---|
| ServSwitch DT Series DVI | |
| 2-Port | KV9502A |
| 4-Port | KV9504A |
| ServSwitch DT Series DVI Kits | |
| 2-Port | KV9502A-K |
| 4-Port | KV9504A-K |
| ✦ Include (1) ServSwitch DT Series DVI and (2) or (4) 6-ft. ServSwitch DT Server Cables for PS/2. | |
| **For your server connections, order…** | |
| ServSwitch DT Server Cable for PS/2 | |
| 6-ft. (1.8-m) | EHN900024P-0006 |
| 10-ft.(3.0-m) | EHN900024P-0010 |

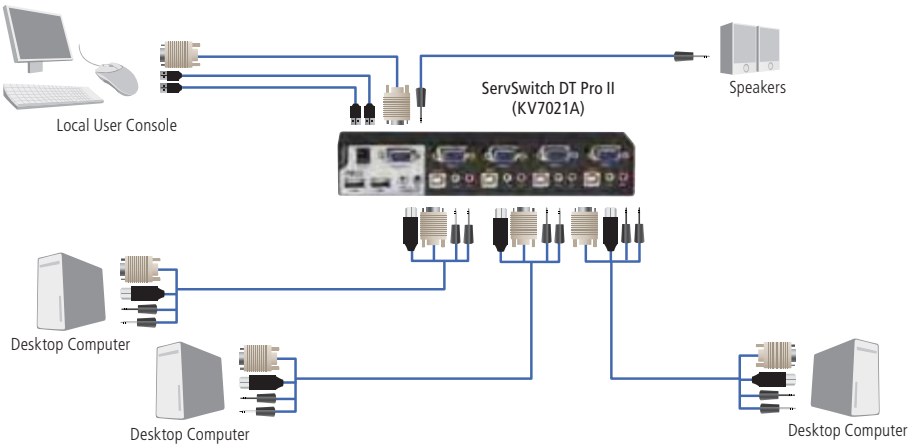
## ServSwitch DT Pro II

### Simple, efficient, and reliable 2- or 4-desktop KVM switching for PS/2 or USB CPUs.

PLATFORMS: PC, Mac® | CONNECTORS: PS/2, USB, VGA | CABLE: Composite | PERIPHERALS: Spkr./Mic, USB | SWITCHING: Push Button, Hotkey | FEATURES: FLASH Upgradable

- Supports 2048 x 1536 maximum resolution and crystal-clear audio.
- Supports three switching layers: KVM, audio, and USB 2.0 peripherals. Switch layers together or independently.
- Works with Windows 98/Me/XP, Windows 2000, Windows NT®, Windows 7, Linux®, NetWare®, and Mac® OS operating systems.
- ✦✦ WARRANTY — 1 Year

**CE Approval** — Yes
**RoHS** — Yes



*Top: KV7021A, front view;*
*bottom: KV7021A, rear view*

| Item | Code |
|---|---|
| ServSwitch™ DT Pro II | |
| 2-Port | KV7020A |
| 4-Port | KV7021A |
| ✦ Include (1) ServSwitch DT Pro II, (1) power supply (PS72021), (1) user's manual, and (1) stand for holding switch vertically. | |
| ServSwitch™ DT Pro II Kits | |
| 2-Port | KV7020A-K |
| 4-Port | KV7021A-K |
| ✦ Include (1) ServSwitch DT Pro II, (2) DT Pro II power cables, (1) power supply (PS72021), (1) user's manual, and (1) stand for holding switch vertically. | |
| **For your CPU connections, order…** | |
| ServSwitch CPU Cables for DT Series | |
| 6-ft. (1.8-m) | EHN7002021-0006 |
| 9-ft. (2.7-m) | EHN7002021-0009 |
| 15-ft. (4.6-m) | EHN7002021-0015 |

## ServSwitch DT Basic II

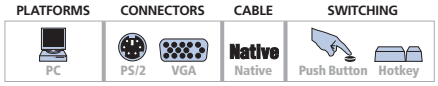
### Use a single PS/2 console to control multiple PS/2 CPUs with PS/2 or serial mice.

- Eliminates the need for multiple PS/2 keyboards, mice, and monitors.
- Supports resolutions up to 1920 x 1440.
- Small footprint makes it ideal for the desktop.
- LEDs indicate selected ports.
- Supports Microsoft® IntelliMouse®, IntelliTrackball, and serial mice.
- Easy to set up. No software to configure.
- ✦✦ WARRANTY — 1 Year

Control up to two or four PS/2 computer CPUs with just one PS/2 keyboard, PS/2 mouse, and a monitor.

Compact, portable, and powered by the interface, the ServSwitch DT Basic II works with most Windows® operating systems and requires no complicated setup. Its small footprint enables you to use it on or under a desk.

Switching CPUs is easy. To select ports, use either hotkeys or front-panel buttons. Or you can use the switch's autoscan function to scan all connected computers automatically, one by one, at 10-second intervals.




### TECH SPECS

**Operating Systems Supported** — Windows 95/98/Me/XP, Windows NT®, Windows 2000, Windows 7
**Resolution (Maximum)** — 1920 x 1440
**CE Approval** — Yes
**RoHS** — Yes
**Connectors** —
CPU: Keyboard: (2) or (4) 6-pin mini DIN F;
Mouse: (2) or (4) 6-pin mini DIN F;
Monitor: (2) or (4) HD15 F;
Console: Keyboard: (1) 6-pin mini DIN F;
Mouse: (1) 6-pin mini DIN F;
Monitor: (1) HD15 F
**Power** — From the interface
**Size** — KV7022A, KV7022A-K: 1.6"H x 4.9"W x 2.7"D (4 x 12.4 x 7 cm);
KV7024A, KV7024A-K: 1.7"H x 8.7"W x 5.1"D (4.4 x 22 x 13 cm)

| Item | Code |
|---|---|
| ServSwitch DT Basic II | |
| 2-Port | KV7022A |
| 4-Port | KV7024A |
| ServSwitch DT Basic II Kits | |
| 2-Port | KV7022A-K |
| 4-Port | KV7024A-K |

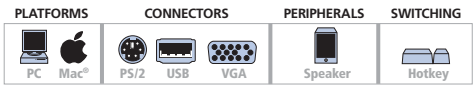
✦ Includes (1) ServSwitch DT Basic II and (2) or (4) 6-ft. ServSwitch DT Basic II CPU Cables.

**For your CPU connections, order...**

| | |
|---|---|
| ServSwitch DT Basic II CPU Cable | |
| 6-ft. (1.8-m) | EHN70023-0006 |
| 9-ft. (2.7-m) | EHN70023-0009 |
| 15-ft. (4.5-m) | EHN70023-0015 |

## ServSwitch Micro

### Control two computers with our low-cost KVM switch in a cable.




- Access two computers from a single shared monitor, keyboard, and mouse.
- Video resolutions up to 1920 x 1440.
- Models available for PS/2 and USB.
- Ultra small size makes it perfect for tight spaces.
- Plug-and-play to install and set up.
- Powered from the interface.
- ✦✦ WARRANTY — 2 Years

*KV408A*

### TECH SPECS

**Cable Length to Computer** — 6 ft. (1.8 m)
**DDC Support** — DDC, DDC2, and DDC2B
**Operating Systems Supported** — Windows® 98/SE/Me/XP, Windows 2000, Windows Vista®, Windows 7, Linux®; USB models support Mac® OS X
**CE Approval** — Yes
**RoHS** — Yes
**Connectors** —
User ports: KV401A–KV406A:
(1) HD15 F for connection to shared monitor,
(2) 6-pin mini DIN F for connection to shared keyboard and mouse;
KV407A–KV408A: (1) HD15 F for connection to shared monitor, (2) USB Type A F for connection to shared keyboard and mouse;
KV404A–KV406A, KV408A also have:
(1) 3.5-mm F stereo audio connector;
CPU ports: KV401A, KV404A: (2) HD15 M, (4) 6-pin mini DIN M;
KV402A, KV405A, KV407A–KV408A: (2) HD15 M, (2) USB Type A M;
KV403A, KV406A: (2) HD15 M, (1) USB Type A M, (2) 6-pin mini DIN M;
KV404A–KV406A, KV408A also have:
(2) 3.5-mm M stereo audio connectors
**Power** — From the interface
**Size** — 1.9"H x 2.4"W x 0.8"D (4.8 x 6.1 x 2 cm)

*NOTE: The ServSwitch Micro does not support serial mice.*

| Item | Code |
|---|---|
| ServSwitch Micro | |
| PS/2 Console | |
| (2) PS/2 Computers | KV401A |
| (2) USB Computers | KV402A |
| (1) USB and (1) PS/2 Computer | KV403A |
| USB Console | |
| (2) USB Computers | KV407A |
| ServSwitch Micro with Audio | |
| PS/2 Console | |
| (2) PS/2 Computers | KV404A |
| (2) USB Computers | KV405A |
| (1) USB and (1) PS/2 Computer | KV406A |
| USB Console | |
| (2) USB Computers | KV408A |

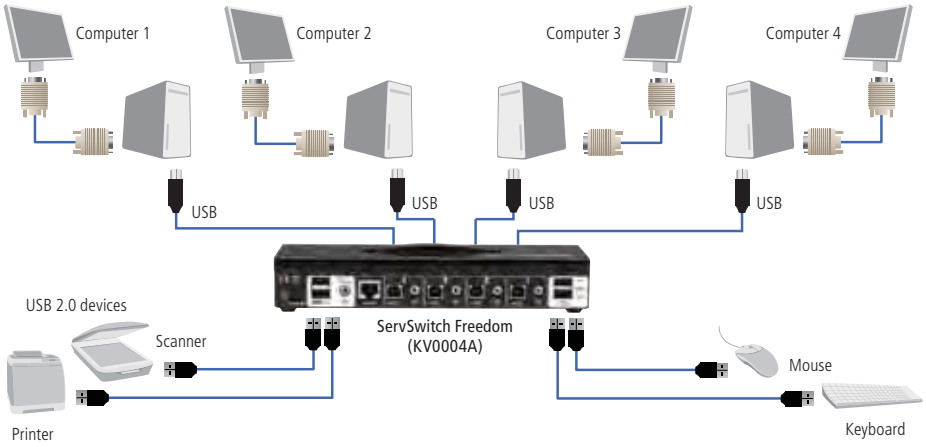
## ServSwitch Freedom

Switching between four separate computer systems is as simple as moving a mouse from one monitor to another.

PLATFORMS: PC, Sun™, Mac® | CONNECTORS: USB | CABLE: Native | PERIPHERALS: Speaker | SWITCHING: Push Button, Hotkey, Mouse | FEATURES: FLASH Upgradable, USB

new

- Ideal for command and control centers.
- Makes for speedy switching between monitors from a tradeshow floor.
- A flexible, 4-port professional-grade switch for simplifying USB keyboard/mouse access to multiple computers.
- Switch ports by moving your mouse from monitor to monitor.
- Enables a single user to switch between four monitors and attached CPUs, and share USB peripherals between them.
- Features two independent USB 2.0 channels for switching between high-speed USB 2.0 peripherals.
- Supports "quick-fire" switching via hotkeys, a mouse, or front-panel buttons.
- Features stereo audio.
- ✦✦ WARRANTY — 2 Years




The ServSwitch™ Freedom™ enables a single USB keyboard/mouse user to easily access information and control operations across four USB computer systems and monitors, saving time and money.

With the ServSwitch Freedom, you can perform functions that ordinarily would require four separate keyboard/mouse sets—freeing up valuable desktop space and simplifying your work. The Freedom works as if you had an extended desktop on a single computer. Instead, you have four PCs, and all you need to do is configure your screen layout. Switching ports is as simple as moving your mouse cursor over the screens' X and Y borders.

It's ideal for professionals in command and control applications, such as those in finance on a trading room floor. Not only can users switch between several computers just by moving the mouse, but they can also simultaneously access a mix of USB peripherals, including high-speed USB 2.0 devices.

When properly configured, the switch has two switched USB Type A ports for the USB 2.0 peripheral connectivity, in addition to its four USB Type B ports for computer channels and two USB Type A ports for USB keyboard/mouse connections.

The keyboard/mouse, audio, and the two individual USB channels can be collectively or separately switched through to each computer system. You can, for instance, create e-mails on one system, listen to audio on a second system, print from a third computer, and scan documents on another—all at the same time.

Even better, there's no need to install any software on the connected computers, so setup is simplified and you won't create any security issues in the process—a real concern in government, healthcare, and banking environments.

In addition, the ServSwitch Freedom works with all known software and operating systems, including Windows®, Linux®, Mac®, Sun™, UNIX®, and NetWare® systems.

### TECH SPECS

**Hardware Compatibility** — All computers with USB interfaces
**User Controls** — (1) Computer button to change computer channels; (1) Mode button to determine which peripherals are switched
**CE Approval** — Yes
**RoHS** — Yes
**Connectors** — CPU/server side:
(4) computer channels, each with (1) USB Type B, (1) 3.5-mm stereo audio jack;
User console: (2) USB Type A (keyboard/mouse), (1) 3.5-mm stereo audio jack;
User console switched USB: (2) USB 2.0 Type A (emulated USB for HID devices; supports USB 2.0 devices in low-, full-, and high-speed modes);
RS-232 control/flash upgrade: (1) RJ-45 (modular 10P10C)
**Power** — External: Input: 100–240 VAC, 50–60 Hz, autosensing;
Output: 5 VDC, 2.5 amp
**Size** — 1.6"H x 9.1"W x 3.4"D (4.1 x 23 x 8.6 cm)
**Weight** — 1.75 lb. (0.8 kg)

| Item | Code |
|---|---|
| ServSwitch Freedom | KV0004A |

✦ Includes (1) ServSwitch Freedom, (1) power adapter with (1) power cord, (4) self-adhesive rubber feet, and (1) software CD.

## USB Laptop Console Crash Cart Adapter

No KVM console in your server room? No problem.
Plug a laptop into the server for quick BIOS-level control.

PLATFORMS: PC, Mac® | CONNECTORS: USB, VGA | CABLE: Native

- Gives you a fast, easy way to log in to a server or computer to troubleshoot or service a system after a crash.
- Handheld adapter plugs into the server on one end and your laptop on the other.
- No drivers to install on the target computer.
- Includes software for viewing server video on your laptop, without having to reboot or change the server in any way.
- Scale the video window as needed and even take a screen snapshot.
- Works with Windows® and Mac® OS X laptops.
- ✦✦WARRANTY — 1 Year

Remedying a server problem in a room without a local user console used to mean wheeling in the "crash cart," a rolling cart loaded with a keyboard, monitor, mouse, and a bunch of connecting cables for on-the-spot computer access.

But with the Black Box® USB Laptop Console Crash Cart Adapter with integrated cabling, you have a compact and easier way to get immediate, BIOS-level access to your server.

Despite its name, there's no actual "cart" involved. In this case, the cart is the laptop that you carry to the server and, using the adapter, plug in to obtain quick server access.

Connect to the video port of any server in trouble to perform emergency system recovery, carry out routine system maintenance, or do whatever server task you like—just as if you had a full KVM console with a VGA monitor connected to the server itself.

### How it works.

Emulating a USB keyboard and mouse, the USB Laptop Console Crash Cart Adapter and its software enable you to interact with the target server as a window on your laptop.

For server connections, the adapter has built-in VGA video and USB keyboard/mouse connectors. On the laptop side, it features a high-speed (480-Mbps) USB Mini Type B connector with a detachable USB cable for server-to-laptop links. For older PS/2 style keyboards (the adapter doesn't support PS/2 mice), there's a passive PS/2 to USB adapter included.

The fully hot-pluggable adapter requires no external power (it gets it all from the connected system or laptop) making it truly portable and easy to use.

### Versatile video scaling options.

There's no need to load any drivers or software on the server—all the software goes on your laptop.

And it's no ordinary terminal emulation software. The adapter's software gives you real-time video scaling so you can always see the entire screen, even on small laptop displays. Enlarge the window to use all pixels of your laptop (with or without the laptop taskbar seen), or shrink to view another application next to it. Video adjustments also include sample phase sharpening and video noise filtering.

What's more, upon rebooting the connected system, the software interface gives you command line interface and BIOS-level visibility from start to finish.

You can even take screen snapshots (as PNG or JPEG files) for system analysis later.

### Possible applications:

- Performing maintenance in server rooms without a lot of space, where you can't fit a crash cart or install a KVM console tray in the rack or cabinet.
- Classrooms where the server or CPUs are stored in the back of the room and you need quick access to diagnose a problem while students are actively working at their computers.
- Troubleshooting ATMs, kiosks, and retail PoS/PoP systems in stores and other areas heavily trafficked by the public.
- Configuring digital signage in real time at the screen, away from the controlling PC (just plug the adapter into the player).
- Any field application where you need to interact with target computers.

### TECH SPECS

**Laptop Requirements** — PC running Windows® 2000, Windows XP, or Windows Vista® or Mac® OS X 10.5 (Leopard) or higher (Intel® processor only); (1) available high-speed USB port (100-mA current); 20 Megabytes available disk space for install; 24-bit color display
**Resolutions (Maximum)** — 1920 x 1200 at 60 Hz or 1600 x 1200 at 75 Hz
**Server Requirements** — (1) USB port (full speed) for keyboard/mouse (500-mA current); analog VGA graphics output (analog DVI can be used with adapter); OS supporting absolute USB mouse (Windows 2000 and later, Mac OS, Linux®, etc.)
**CE Approval** — Yes
**RoHS** — Yes
**Connectors** — Inputs on integrated cable (to server): VGA: HD15 M; USB: USB Type A M; Outputs (to laptop): Mini USB Type B F (USB 2.0), with detachable USB Mini Type B male to USB Type A male cable
**Power** — From the server or laptop USB interface with a maximum of 500 mA at 5 VDC
**Size** — 0.6"H x 2.9"W x 4.5"D (1.5 x 7.4 x 11.5 cm)
**Weight** — 0.4 lb. (0.2 kg)

| Item | Code |
|---|---|
| USB Laptop Console Crash Cart Adapter | KVT100A |

✦ Includes (1) adapter with built-in VGA and USB cables, (1) passive PS/2 to USB keyboard adapter, (1) USB Mini Type B male to USB Type A male cable, and (1) flash drive with software and user's manual.

KVM console trays for mounting in the rack or cabinet, pp. 38–45.

## Buyer's Guide | KVM Trays

For product details, see the page listed or go to **blackbox.nl**.

| Compatibility | | | Monitor Size | | | Minimum Rail Depth | Maximum Rail Depth | ServSwitch KVM | Maximum Resolution | Display Colors | Code | Product |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PS/2 | USB | Sun™ | 15" | 17" | 19" | | | | | | | |
| • | • | — | — | • | — | 39.1 cm | 65 cm | — | 1280 x 1024 | 16.2 million | KVT317A-R2 | ServView KVM Drawer with LCD, **p. 44** |
| • | • | — | — | — | • | 39.1 cm | 65 cm | — | 1280 x 1024 | 16.7 million | KVT319A-R2 | |
| — | • | • | — | • | — | 39.1 cm | 65 cm | — | 1280 x 1024 | 16.2 million | KVTS317A | ServView KVM Drawer with LCD for Sun, **p. 44** |
| — | • | • | — | — | • | 39.1 cm | 65 cm | — | 1280 x 1024 | 16.7 million | KVTS319A | |
| • | — | — | — | • | — | 39.1 cm | 65 cm | — | 1280 x 1024 | 16.2 million | KVT217A-R2 | ServView KVM Separate Drawer for Keyboard/ Mouse, **p. 44** |
| • | — | — | — | — | • | 39.1 cm | 65 cm | — | 1280 x 1024 | 16.7 million | KVT219A-R2 | |
| • | • | — | — | • | — | 39.1 cm | 65 cm | — | 1280 x 1024 | 16.2 million | KVT317A-R2-T | ServView™ KVM Drawer with Touch Screen LCD |
| • | • | — | — | — | • | 39.1 cm | 65 cm | — | 1280 x 1024 | 16.7 million | KVT319A-R2-T | |
| • | • | — | — | • | — | 60.2 cm | 115.1 cm | • | 1280 x 1024 | 16.2 million | KVT517A-1UV | ServView V KVM Drawer, **pp. 40-41** |
| • | — | — | — | • | — | 60.2 cm | 115.1 cm | • | 1280 x 1024 | 16.2 million | KVT517A-8PV | |
| • | • | — | — | • | — | 60.2 cm | 115.1 cm | • | 1280 x 1024 | 16.2 million | KVT517A-8UV | |
| • | — | — | — | • | — | 60.2 cm | 115.1 cm | • | 1280 x 1024 | 16.2 million | KVT517A-16PV | |
| • | • | — | — | • | — | 60.2 cm | 115.1 cm | • | 1280 x 1024 | 16.2 million | KVT517A-16UV | |
| — | • | — | — | • | — | 60.2 cm | 115.1 cm | • | 1920 x 1080 | 262 k | KVT517A-8DV-WIDE | ServView V KVM Drawer, Wide Screen, 8-Port KVM Switch, USB, DVI, **pp. 40-41** |

## Buyer's Guide | Modular KVM Trays

For product details, see the page listed or go to **blackbox.nl**.

| Compatibility | | | Monitor Size | | | Minimum Rail Depth | Maximum Rail Depth | ServSwitch KVM | Maximum Resolution | Display Colors | Code | Product |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PS/2 | USB | Sun | 15" | 17" | 19" | | | | | | | |
| | | | | | | | | | | | | ServTray™ Complete, **pp. 42–43**: Select the Screen Size |
| — | — | — | • | — | — | 60.2 cm | 115.1 cm | — | 1024 x 768 | 262 k | KVT415A-R2 | 15" Screen |
| — | — | — | — | • | — | 60.2 cm | 115.1 cm | — | 1280 x 1024 | 262 k | KVT417A-R2 | 17" Screen |
| — | — | — | — | — | • | 60.2 cm | 115.1 cm | — | 1280 x 1024 | 16.7 million | KVT419A-R2 | 19" Screen |
| | | | | | | | | | | | | Then select the KVM Switch Module |
| • | • | — | — | — | — | — | — | • | — | — | KVT4S1UV* | 1-Port |
| • | — | — | — | — | — | — | — | • | — | — | KVT4S8PV* | 8-Port Module PS/2 Only |
| • | • | — | — | — | — | — | — | • | — | — | KVT4S8UV* | 8-Port Module PS/2 or USB |
| • | — | — | — | — | — | — | — | • | — | — | KVT4S16PV* | 16-Port Module PS/2 Only |
| • | • | — | — | — | — | — | — | • | — | — | KVT4S16UV* | 16-Port Module PS/2 or USB |

* These KVM switching modules are for use with ServTray Complete (KVT415A-R2, KVT417A-R2, and KVT419A-R2) and the ServView V KVM Drawer (KVT517A) only. They are not stand-alone KVM switches. Questions? Call our FREE Tech Support.

## Black Box Explains

# KVM tray technology.

### What we do that others don't.

From the solid construction of our KVM trays, to unique features like LEDs on the front panel and integrated KVM switching, Black Box's KVM trays are miles ahead of the competition.

Nothing reduces clutter in a server room like KVM trays that are 1- or 2U high, and mount in a cabinet or rack. Here are some of the features that set our KVM trays apart.

### TFT LCD support.

This type of monitor uses thin-film transistor (TFT) technology to improve image quality, resulting in higher resolutions, better image contrast, and addressability. All our KVM trays support TFT LCD panel monitors.

### Viewing angles.

The screens on our KVM trays are viewable from nearly any angle. Because of the size of our screens, from 15" to 19" screens, viewing angles vary from 140° x 120° all the way up to 160° x 160°, so you don't always have to be standing directly in front of the monitor to see what's happening on it.

### Universal rail.

On the ServTray Complete family of KVM trays (**pages 42-43**), we have moved from a variety of rear bracket sizes to one adjustable length. This universal rail rear bracket size fits racks with depths of 60.2 cm to 115 cm. This simplifies ordering for you!

### Dual rail technology.

This KVM tray technology enables the monitor drawer and the keyboard/mouse drawer to move independently of each other. It makes it easy to leave the monitor visible even when a server cabinet is closed and the keyboard/mouse drawer is fully retracted. Black Box has added switching controls to the monitor bezel that can be used to control an attached switch without pulling open the keyboard/mouse drawer for even more space-saving benefits.

Additionally, the dual rails provide a great monitoring environment without disturbing your cooling system.

### You asked for it.

Our latest KVM trays, the ServView V KVM Drawer and ServView V KVM Drawer with Widescreen (**pages 40-41**) were designed based on feedback we have received from some of our customers.

On the front panel of the tray, there is an LED panel, which helps you locate the drawer when it's closed in a darkened data center. The tray only takes up 1U of rack space, and it features the dual rail technology described earlier.

We added front-panel controls for switching, so if you choose a model with an embedded KVM switch, you can use the buttons on the monitor bezel without pulling out the keyboard. Additionally, the top of the keyboard tray features a hideaway connection for USB wireless devices, such as RF- or Bluetooth® supported keyboards and mice. You can wirelessly access your attached targets, without even opening the cabinet door!

Another feature is the front-panel USB port, which provides crash cart access. If your keyboard or Glidepoint® mouse quit on you, simply use this port to attach a passthrough pointing device.

Finally, the widescreen version supports 1920 x 1080 resolutions and DVI connections — two firsts in the data center.

*With dual-rail technology, the monitor stays open and visible while the keyboard/mouse tray is closed so the cabinet door can be shut.*

*A USB hideaway at the top of the keyboard/mouse tray enables you to install a wireless USB keyboard and mouse (RF or Bluetooth).*

## ServView V KVM Drawer
## ServView V KVM Drawer, Wide Screen

# Rackmountable, dual-rail, 1U console drawers

- Dual-rail console drawers feature keyboard, touch pad, and LCD monitor in only 1U of rack space.
- Keyboard and LCD display slide in and out independently, enabling the monitor to remain visible while keyboard is stored.
- Flip-open 17" standard LCD panel supports resolutions up to 1280 x 1024; the wide screen supports up to 1920 x 1080.
- Front-panel USB 2.0 port remains accessible to peripherals even with keyboard and mouse tray closed.
- Optional KVM switch function module connects to VGA or DVI, and either PS/2 or USB servers.
- Dual-rail tray technology enables independent movement of the monitor drawer and the keyboard/mouse drawer.
- For more details on KVM tray technology, see **page 39**.
- ✦✦ WARRANTY — 1 Year

*ServView V (KVT517A-XXX) with LCD panel open and keyboard and mouse tray drawer open.*

*For even more convenience and versatility, the top of the keyboard/mouse tray features a hideaway USB port for USB HID-supported wireless keyboards and mice (RF or Bluetooth.)*

ServView V KVM Drawers offer server management in a space-saving, streamlined package. The trays include a keyboard, touch pad, and a high-resolution 17" TFT LCD panel (choose standard or widescreen), all housed in an industry-standard 19" 1U rack drawer, saving you valuable cabinet space. For even more space savings, switch selection buttons on the monitor bezel enable you to switch between servers with only the LCD panel open.

### Pick a number

Order the Single-Port ServView V for easy access to just one server. For access to more servers, order a ServView V with an integral 8- or 16-port KVM switch module. You can cascade multiple ServView V consoles with switch modules together, enabling you to control many more servers.

The Wide Screen ServView V is available only with a 8-port KVM switch. For other configurations, contact our FREE Tech Support.

### Dual-rail Tray Technology

The dual-rail design enables the keyboard and LCD display to slide in and out of the rack independently of each other. Store the keyboard out of the way while keeping the display open so you can easily monitor your servers. Check system status even with the cabinet door closed.

### Control made easy

Save space by using the switching controls on the monitor bezel to control the switching module without pulling open the keyboard drawer. The top of the drawer has an LED lighting bar to make the closed drawer easy to find in a dark rack.

You can install a USB RF or Bluetooth® adapter in the hide-away at the top of the keyboard/mouse tray to access the ServView V and servers with your own wireless keyboard.

### Crystal clear

The standard ServView V features a sharp LCD screen with up to 1280 x 1024 resolution. The wide-screen ServView V provides an even broader view with up to 1920 x 1080 resolution and a DVI interface.

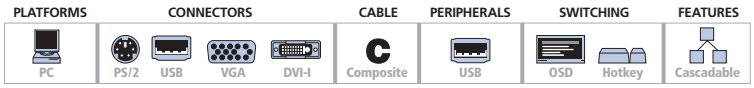
Support for VESA DDC 1/2B enables the monitor to automatically adjust to its optimum performance when connected to a server that supports DDC.

### Rack it up

The ServView V KVM tray installs in 4-post racks or cabinets with a rail depth of 60.2 cm minimum to 115.1 cm maximum. A rackmount kit is included.

### What's included

- ServView V KVM tray
- KVM switch module (except for the single-port model)
- Power supply
- Power cord
- Universal rear rail kit:
  - (2) brackets
  - (2) extenders
  - (8) screws
- User's manual
- Single-port model also includes computer cables for connection to USB or PS/2 devices




# for when space is at a premium.

*ServView V (KVT517A-XXX) with LCD panel open and keyboard and mouse tray closed.*

*KVM switch selection buttons on the monitor bezel **(above)** enable switching between servers with only the LCD panel open.*

*All models have an LED bar on the front **(above)** that enables you to easily find your closed tray in a darkened server room or data center.*

*ServView V Wide Screen (KVT517A-8DV-WIDE) with LCD panel open and keyboard and mouse tray closed.*

## TECH SPECS

**Active Display Area** — KVT517A-1UV, KVT517A-8PV, KVT517A-8UV, KVT517A-16PV, KVT517A-16UV: 10.6"H x 13.3"W (27 x 33.8 cm); KVT517A-8DV-WIDE: 9"H x 14.5" (22.9 x 36.7 cm)
**Adjustments** — On-screen display
**Backlight Unit** — 4 CCFLs edge-light (top/bottom)
**Colors** — 262 k (RGB 6-bit)
**Contrast Ratio** — 500:1
**Display** — TFT LCD
**Environmental** — Operating Temperature: 32 to 122° F (0 to 50° C); Storage Temperature: -4 to +140° F (-20 to +60°C); Operating Humidity: 8 to 95% relative; Storage Humidity: <95% relative
**Input Signal** — RGB analog, H/V separate
**Pixel Pitch** — KVT517A-1UV, KVT517A-8PV, KVT517A-8UV, KVT517A-16PV, KVT517A-16UV: 0.264 mm; KVT517A-8DV-WIDE: 0.1989 mm
**Resolution (Maximum)** — KVT517A-1UV, KVT517A-8PV, KVT517A-8UV, KVT517A-16PV, KVT517A-16UV: 1280 x 1024; KVT517A-8DV-WIDE: 1920 x 1080 (1920 x 1200 scaled)
**Viewing Angle** — KVT517A-1UV, KVT517A-8PV, KVT517A-8UV, KVT517A-16PV, KVT517A-16UV: -80 to +80, -80 to +80 typical; KVT517A-8DV-WIDE: -70 to +70, -60 to +60 typical
**CE Approval** — Yes except for KVT517A-8DV-WIDE
**RoHS** — Yes
**Power** — KVT517A-1UV, KVT517A-8PV, KVT517A-8UV, KVT517A-16PV, KVT517A-16UV: External Power Supply: 100–240-VAC, 50–60 Hz with 12-VDC, 4-A output, 37 watts maximum; KVT517A-8DV-WIDE: Internal power supply: 100–240-VAC, 50–60 Hz with 12-VDC, 4-A output, 20.6 watts maximum
**Size** — 1.7"H x 17.3"W x 19.5 to 39.5"D (4.4 x 44 x 49.5 to 100.3 cm)

| Item | Code |
|---|---|
| ServView V KVM Drawers | |
| Single-Port, VGA, USB, PS/2 | KVT517A-1UV |
| with 8-Port KVM Switch, VGA, PS/2 | KVT517A-8PV |
| with 8-Port KVM Switch, VGA, USB, PS/2 | KVT517A-8UV |
| with 16-Port KVM Switch, VGA, PS/2 | KVT517A-16PV |
| with 16-Port KVM Switch, VGA, USB, PS/2 | KVT517A-16UV |
| with 8-Port DVI KVM Switch, Wide Screen | KVT517A-8DV-WIDE |
| **You may also need...** | |
| ServView V CPU Cables | |
| PS/2 Cables | |
| 6-ft. (1.8-m) | EHN70001-0006 |
| 10-ft. (3.0-m) | EHN70001-0010 |
| 15-ft. (4.5-m) | EHN9000P-0015 |
| 30-ft. (9.1-m) | EHN9000P-0030 |
| USB Cables | |
| 6-ft. (1.8-m) | EHN9000U-0006 |
| 10-ft. (3.0-m) | EHN9000U-0010 |
| 15-ft. (4.5-m) | EHN9000U-0015 |

## ServTray Complete

# Install a rackmounted keyboard, monitor, and

*8-port KVM switching module embedded in the ServTray Complete*

- Reduce clutter in your server room.
- Choose from 15", 17", or 19" monitors and integral 1-, 8-, or 16-port KVM switches.
- Mounts in a standard 19" cabinet or four-post rack with depths from 60 to 115 cm.
- Compact— only 1U high.
- Includes a full-sized keyboard and a touchpad with an ergonomic hand rest.
- A front panel conceals the unit when not in use.
- ✦✦ WARRANTY — 1 Year

The ServTray Complete adds an integral KVM switch to its keyboard, monitor, and mouse and packs it all into only 1U of rack space. It mounts on standard 19" rails in any standard server cabinets and enables you to manage as many as 16 PS/2 or USB servers or a combination of the two. If you're looking for a way to make your server room even more functional without sacrificing valuable space, you've found it!

### Save space, increase efficiency.

Designed for heavy-duty use, the ServTray Complete can replace that bulky local workstation you've been using. Just slide out the drawer and open the flat-screen monitor.

The ServTray Complete features a full-sized 105-key keyboard—no trying to type on tiny keys too small for your fingertips. The touchpad includes an ergonomic hand rest.

When you're done, simply slide it back in place. The front panel conceals the unit when not in use.

### Choose the size that's right for you.

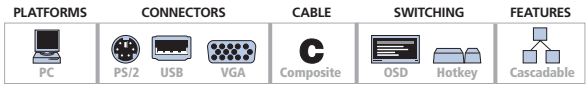
The ServTray Complete is available with screen sizes of 15", 17", and 19", and can accommodate switching modules with 8 or 16 ports or a 1-port connection module.

Once you've selected your switch module, choose the cables for 8- and 16-port models. The single-port model comes complete with cables, so you don't need to add them.

### Easy mounting.

The ServTray Complete includes a universal rear rail kit, which mounts the ServTray on the front and rear rails with a depth of 60 to 115 cm—that's rail depth, not total cabinet depth, so if you have extra-deep cabinets, the ServTray will still fit as long as the rail depth is within limits.

Both ServTray and its switch module are powered through an autosensing 100- to 240-VAC power supply that plugs right into the nearest power strip or PDU.




# mouse together with a KVM switch module.

## TECH SPECS

*Connection/Switch Modules:*
**Environmental** — Operating Temperature: 32 to 104° F (0 to 40° C);
Operating Humidity: Up to 80%, noncondensing
**Supported Operating Systems** — Windows 98/Me/2000/XP, Windows NT, Windows Vista, Windows 7
**CE Approval** — Yes
**RoHS** — Yes
**Connectors — All:** (1) Centronics® 36 F, (1) barrel connector for power;
1-port module: (1) HD15 F, (2) 6-pin mini DIN F, (1) USB Type B F;
8-port switch modules:
Computer: (8) HD15 F,
Console: (1) HD15 female, (2) 6-pin mini DIN F;
16-port switch modules:
Computer: (16) HD15 F,
Console: (1) HD15 F, (2) 6-pin mini DIN F
**Power** — From ServTray: 12 VDC, 3 A; May also accept 9-12 VDC, 500 mA from external power supply (not inlcuded) through barrel connector
**Size** — 1-port switch module: 1.75"H (1U) x 15.9"W x 4.5"D (4.5 x 40.4 x 11.4 cm);
8- and 16-port switch modules: 1.75"H (1U) x 17.3"W x 7"D (4.6 x 43.8 x 18 cm)
**Weight** — 1-port module: 2 lb. (0.9 kg);
8-port switch modules: 4.8 lb. (2.2 kg)
16-port switch modules: 5.7 lb. (2.6 kg)

*Trays:*
**Active Display Area** — KVT415A-R2: 9"H x 12"W (22.8 x 30.4 cm);
KVT417A-R2: 10.6"H x 13.3"W (27 x 33.8 cm);
KVT419A-R2: 11.8"H x 14.8"W (30.1 x 37.6 cm)
**Backlight Unit** — KVT415A-R2: 2 CCFLs edge-light (top/bottom);
KVT417A-R2, KVT419A-R2: 4 CCFLs edge-light (top/bottom)
**Brightness** — 250 (center)
**Contrast Ratio** — KVT415A-R2: 350:1;
KVT417A-R2: 450:1;
KVT419A-R2: 500:1
**Display Color** — 262 K colors
**Environmental** — Operating Temperature: 32 to 122° F (0 to 50° C);
Operating Humidity: Up to 95%, noncondensing
**Input Signal** — RBG analog, H/V separate
**Pixel Pitch** — KVT415A-R2: 0.297 mm (H) x 0.297 mm (V);
KVT417A-R2, KVT419A-R2: 0.294 mm (H) x 0.294 mm (V)
**Resolution** — KVT415A-R2: 1024 x 768 @ 60 Hz;
KVT417A-R2, KVT419A-R2: 1280 x 1024 @ 60 Hz
**Viewing Angle** — KVT415A-R2: -70 to +70 (H), -60 to +60 (V);
KVT417A-R2: -80 to +80 (H), -80 to +80 (V);
KVT419A-R2: -85 to +85 (H), -85 to +85 (V)
**CE Approval** — Yes
**RoHS** — Yes
**Connectors** — (1) Centronics® 36 M
**Power** — External power supply: 100–240-VAC, 47–63 Hz;
Output: 12 VDC; Draw: 33 watts
**Size** — KVT415A-R2: 1.75"H (1U) x 15"W x 19.5" to 39.5"D (4.4 x 38.1 x 49.5 to 100.3 cm);
KVT417A-R2: 1.75"H (1U) x 17"W x 19.5" to 39.5"D (4.4 x 43.2 x 49.5 to 100.3 cm);
KVT419A-R2: 1.75"H (1U) x 19"W x 19.5" to 39.5"D (4.4 x 48.3 x 49.5 to 100.3 cm)
**Weight** — KVT415A-R2: 21 lb. (9.5 kg);
KVT417A-R2: 23 lb. (10.4 kg);
KVT419A-R2: 25 lb. (11.3 kg)

## What's included

- ServTray KVM tray
- KVM switch module *(except 1-port model, which includes a KVM connection module)*
- Power supply
- Power cord
- Universal rear rail kit:
  - (2) brackets
  - (2) extenders
  - (8) screws
- User's manual
- Single-port model also includes computer cables for connection to USB or PS/2 devices

| Item | Code |
|---|---|
| ServTray Complete | |
| 15" Screen (KVT415A-R2) | |
| PS/2 or USB | |
| 1-Port Module | KVT415A-1UV-R2 |
| 8-Port Switch Module | KVT415A-8UV-R2 |
| 16-Port Switch Module | KVT415A-16UV-R2 |
| PS/2 Only | |
| 8-Port Switch Module | KVT415A-8PV-R2 |
| 16-Port Switch Module | KVT415A-16PV-R2 |
| 17" Screen (KVT417A-R2) | |
| PS/2 or USB | |
| 1-Port Module | KVT417A-1UV-R2 |
| 8-Port Switch Module | KVT417A-8UV-R2 |
| 16-Port Switch Module | KVT417A-16UV-R2 |
| PS/2 Only | |
| 8-Port Switch Module | KVT417A-8PV-R2 |
| 16-Port Switch Module | KVT417A-16PV-R2 |
| 19" Screen (KVT419A-R2) | |
| PS/2 or USB | |
| 1-Port Module | KVT419A-1UV-R2 |
| 8-Port Switch Module | KVT419A-8UV-R2 |
| 16-Port Switch Module | KVT419A-16UV-R2 |
| PS/2 Only | |
| 8-Port Switch Module | KVT419A-8PV-R2 |
| 16-Port Switch Module | KVT419A-16PV-R2 |
| ServTray Complete Server Cables *(NOTE: You'll only need cables for 8- and 16-port models; cables are included with the 1-port model.)* | |
| PS/2 Only | |
| 6-ft. (1.8-m) | EHN70001-0006 |
| 10-ft. (3.0-m) | EHN70001-0010 |
| 15-ft. (4.5-m) | EHN9000P-0015 |
| 30-ft. (9.1-m) | EHN9000P-0030 |
| PS/2 or USB | |
| 6-ft. (1.8-m) | EHN9000U-0006 |
| 10-ft. (3.0-m) | EHN9000U-0010 |
| 15-ft. (4.5-m) | EHN9000U-0015 |

## ServView KVM Drawers with LCD

Save space in the server room.

PLATFORMS: PC, Sun™, Mac® | CONNECTORS: PS/2, USB, VGA | CABLE: Native

Now supports USB!

*KVT319A-R2*

- Feature a 17" or 19" Class A active matrix TFT LCD panel with resolutions up to 1280 x 1024.
- The KVT317A-R2 and KVT319A-R2 now support USB!
- Take just 1U of rack space.
- Include a PS/2 keyboard and trackball mouse.
- The KVTS317A and KVTS319A are Sun™ compatible.
- Adjust and fine-tune LCD setting using an on-screen display.
- Include mounting hardware and cables.
- To control more than one server, just add a ServSwitch™.
- ✦✦ **WARRANTY** — 2 Years

### TECH SPECS

**Contrast Ratio** — KVT317A-R2: 350:01:00; KVT319A-R2: 500:01:00 KVTS317A, KVTS319A: 700:1
**Display Area** — KVT317A-R2, KVTS317A: 13.3" x 10.6" (33.8 x 26.9 cm); KVT319A-R2, KVTS319A: 14.8" x 11.9" (37.6 x 30.2 cm)
**Display Colors** — KVT317A-R2, KVTS317A: 16.2 million; KVT319A-R2, KVTS319A: 16.7 million
**Input Signal** — Analog RGB 0.7 Vp-p
**Racking Depth** — KVT317A-R2, KVT319A-R2: **15.34"—35.04"** **KVTS317A, KVTS319A: 24"—36"**
**Resolution (Maximum)** — 1280 x 1024
**Sync** — KVT317A-R2, KVTS317A: Horizontal: 56.7–82.082 kHz; Vertical: 55–77 Hz; KVT319A-R2, KVTS319A: Horizontal: 53–79.796 kHz; Vertical: 50–75 Hz
**Viewing Angle** — KVT317A-R2: 140° x 120°; KVT319A-R2: 170° x 170°; KVTS317A, KVTS319A: 150° x 135°
**CE Approval** — Yes
**RoHS** — Yes
**Power** — 12-VDC adapter with VESA DPMS power management
**Size** — KVT317A-R2, KVTS319A: 1.75"H (1U) x 17.4"W x 25.6"D (4.4 x 44.2 x 65 cm); KVTS317A: 1.75"H (1U) x 17.4"W x 23.6"D (4.4 x 44.2 x 59.9 cm) KVT319A: 2.6"H x 17.4"W x 26.4"D (6.6 x 44.2 x 67.1 cm)
**Weight** — KVT317A-R2: 44 lb. (20 kg); KVT319A-R2: 48.4 lb. (22 kg); KVTS317A: 32 lb. (14.5 kg); KVTS319A: 34.2 lb. (15.5 kg)

The ServView™ KVM Drawer with LCD combines a monitor and a low-profile, notebook-style keyboard with trackball mouse in a durable tray assembly. They include a USB keyboard, monitor, and three-button trackball mouse; the Sun version includes a Sun compatible keyboard, three-button trackball mouse, and Sun administrative keys on a keypad.

Ideal for server-dense rack installations, it can be mounted at a comfortable working height for you. The keyboard and monitor tray attaches to the drawer case on ball-bearing telescopic slides. When you need to access your server, just pull the drawer out on its rails—it glides out smoothly—flip up the monitor, and you have control of your server. When you're done working, just push it in.

This ServView KVM Drawer's unique fold-backward design for the LCD enables easy viewing while you're typing at the keyboard or observing the monitor through a cabinet's closed glass door. The LCD assembly features a membrane framed by an aluminum front cover that shields the screen and its internal circuitry.

| Item | Code |
|---|---|
| ServView™ KVM Drawers with LCD | |
| 17" LCD | KVT317A-R2 |
| 19" LCD | KVT319A-R2 |
| ServView KVM Drawers with LCD for Sun | |
| 17" LCD | KVTS317A |
| 19" LCD | KVTS319A |

## ServView KVM Drawers with Separate Drawer for Keyboard/Mouse and LCD

Keep the keyboard/mouse stored away while viewing the LCD monitor!

PLATFORMS: PC | CONNECTORS: PS/2, VGA | CABLE: Native

- Features a 17" or 19" LCD display with resolutions up to 1280 x 1024.
- Store away in a cabinet or 4-post rack and use only 2U of space.
- View the monitor without pulling out the keyboard/mouse tray.
- PS/2 keyboard tray features an integrated three-button trackball mouse and a handle.
- USB compatible.
- Use on-screen display (OSD) controls to easily adjust display resolution and other LCD settings.
- Drawer assembly's sturdy design stands up to heavy use.
- ✦✦ **WARRANTY** — 2 Years

**CE Approval** — Yes
**RoHS** — Yes

| Item | Code |
|---|---|
| ServView KVM Drawer with Separate Drawer for Keyboard/Mouse and LCD | |
| 17" LCD | KVT217A-R2 |
| 19" LCD | KVT219A-R2 |

# ServView II Ultra • ServView III • ServView IV

## Reduce clutter in your server room with these console drawer options.

### ServView II Ultra

*KVT130A-R4*

**CE Approval** — Yes
**RoHS** — Yes

*NOTE: For specifications on all the ServView KVM Tray models, go to **the website**.*

- Comes with a 17" LCD with 1280 x 1024 maximum resolution.
- VGA, SVGA, XGA, Mac® VGA, and Mac XGA video compatibility.
- Supports AT/XT, PS/2, UNIX®, Sun™, and Mac computers.
- Slides in and out; front panel conceals the drawer when it's not in use.
- Basic model has a full-size PS/2 keyboard and trackball. Optionally available with a USB keyboard and/or touchpad glidepoint mouse.
- Also available with an integrated ServSwitch™.
- Fits in 1U of space in a standard rack or cabinet with four mounting rails.
- Monitor features 16.7 million colors and a 150:1 contrast ratio.
- On-screen display for easy fine-tuning of monitor display.
- ✦✦WARRANTY — 1 Year

| Item | Code |
|---|---|
| ServView™ II Ultra | |
| To order a standalone ServView KVM Tray... | |
| Basic | |
| PS/2 Keyboard and Trackball Mouse | KVT130A-R4 |
| USB Keyboard and Trackball Mouse | KVT186A-R2 |
| USB Keyboard and Glidepoint Touchpad Mouse | KVT176A-R2 |
| PS/2 Keyboard and Glidepoint Touchpad Mouse | KVT166A-R2 |
| To add a ServSwitch to your ServView KVM Tray, insert the red code from above in the "____". | |
| with 8-Port ServSwitch | KVT____-KITA |
| with Matrix ServSwitch for PC, 2 x 8 | KVT____-KITB |
| with 8-Port ServSwitch Ultra™ | KVT____-KITC |
| with Multiplatform Matrix ServSwitch, 2 x 8 | KVT____-KITD |

### ServView III

*KVT171A-R2*

**CE Approval** — Yes
**RoHS** — Yes

*NOTE: For specifications on all the ServView KVM Tray models, go to **the website**..*

- Features a large 19" LCD with 1280 x 1024 maximum resolution.
- VGA, SVGA, XGA, Mac VGA, and Mac XGA video compatibility.
- Full-size PS/2 or USB keyboard.
- Models come with glidepoint touchpad or trackball mice.
- Slides in and out, with a front panel that conceals the drawer when it's not in use.
- Fits in 1U of space in a standard rack or cabinet with four mounting rails.
- Models with an integrated ServSwitch are available.
- Monitor features 16.7 million colors, a 150:1 contrast ratio, and has front-panel controls for easy adjustment.
- ✦✦WARRANTY — 1 Year

| Item | Code |
|---|---|
| ServView III | |
| To order a standalone ServView KVM Tray... | |
| Basic | |
| PS/2 Keyboard and Trackball Mouse | KVT140A-R3 |
| USB Keyboard and Trackball Mouse | KVT191A-R2 |
| PS/2 Keyboard and Glidepoint Touchpad Mouse | KVT171A-R2 |
| USB Keyboard and Glidepoint Touchpad Mouse | KVT181A-R2 |
| To add a ServSwitch to your ServView KVM Tray, insert the red code from above in the "____". | |
| with 8-Port ServSwitch | KVT____-KITA |
| with Matrix ServSwitch for PC, 2 x 8 | KVT____-KITB |
| with 8-Port ServSwitch Ultra | KVT____-KITC |
| with Multiplatform Matrix ServSwitch, 2 x 8 | KVT____-KITD |

### ServView IV

*KVT160A-R2*

**CE Approval** — KVT160A-R2, KVT160A-R2-KITC, KVT160A-R2-KITD
**RoHS** — KVT160A-R2, KVT160A-R2-KITC, KVT160A-R2-KITD

- 17" or 19" LCD monitors feature 1280 x 1024 maximum resolution.
- Video compatibility includes DVI-D, S-Video, and Composite, along with VGA, SVGA, XGA, Mac VGA, and Mac XGA.
- Installs in standard 19" cabinets with four mounting rails.
- Drawer slides out and unfolds for operation, and folds down and slides in when not needed; front panel conceals drawer when not in use.
- Full-size Sun keyboard with separate numeric keypad and special keys for Sun servers.
- Also available with an integrated ServSwitch.
- On-screen display for adjusting monitor.
- ✦✦WARRANTY — 1 Year

| Item | Code |
|---|---|
| ServView IV for Sun with USB | |
| 17" LCD Display, 1U | KVT160A-R2 |
| with 8-Port ServSwitch Ultra | KVT160A-R2-KITC |
| with Multiplatform Matrix ServSwitch | KVT160A-R2-KITD |
| 19" LCD Display, 2U | KVT163A |
| with 8-Port ServSwitch Ultra | KVT163A-KITC |
| with Multiplatform Matrix ServSwitch | KVT163A-KITD |

## Buyer's Guide | KVM Extension over Copper

For product details, see the page listed.

| Distance (Max.) | Heads | Video Type | Console | Access | Speaker /Mic | Serial | Product Code | Product Name |
|---|---|---|---|---|---|---|---|---|
| 22.8 m | Single | VGA | PS/2 | Single | — | — | ACU075A-PS2 | ServSwitch™ KVM Short-Range Extenders |
| 22.8 m | Single | VGA | USB | Single | — | — | ACU075A-USB | |
| 45.7 m | Single | VGA | PS/2 | Single | — | — | ACU3001A | ServSwitch Brand CAT5 KVM Micro Extender Kits, **p.65** |
| 45.7 m | Single | VGA | PS/2 | Dual | — | — | ACU3009A | |
| 45.7 m | Single | VGA | PS/2 | Single | • | • | ACU3022A | |
| 50 m | Single | VGA | USB | Dual | • | — | ACU5051A | ServSwitch Wizard™ USB SRX KVM Extenders, **p. 62** |
| 50 m | Dual | VGA | USB | Dual | • | • | ACU5052A | |
| 50 m | Single | DVI | USB | Single | — | — | ACU5501A | ServSwitch Wizard SRX DVI-D Plus USB Extenders, **p. 63** |
| 50 m | Single | VGA | USB | Single | — | — | ACU4001A | ServSwitch Brand Micro Extender Kits, USB, **p. 64** |
| 50 m | Dual | VGA | USB | Single | — | — | ACU4201A | |
| 50 m | Dual | VGA | USB | Single | • | • | ACU4222A | |
| 50 m | Dual | VGA | PS/2 | Single | — | — | ACU3201A | ServSwitch Brand Micro (Dual-Video) Extender Kits, PS/2, **p. 64** |
| 50 m | Dual | VGA | PS/2 | Single | • | • | ACU3222A | |
| 50 m | Dual | VGA | PS/2 | Dual | — | — | ACU3209A | |
| 50 m | Dual | VGA | PS/2 | Dual | • | • | ACU3228A | |
| 100 m | Single | VGA | PS/2 | Single | — | — | ACU5001A | Low-Cost ServSwitch Wizard Extender Kits, **p. 61** |
| 100 m. | Single | VGA | PS/2 | Single | — | — | ACU5002A* | |
| 100 m | Single | DVI | PS/2 | Dual | — | — | ACS253A-CT | ServSwitch DVI/VGA CATx Extenders, **p. 60** |
| 100 m | Single | VGA/ DVI | USB | Single | • | — | DTX5000 | ServSwitch DTX, **pp. 48-49** |
| 100 m | Dual | VGA/ DVI | USB | Single | • | — | DTX5002 | |
| 100 m | Single | DVI | USB | Single | • | — | ACR1000A | ServSwitch Agility, **pp. 50-51** |
| 120 m | Single | VGA | USB | Single | • | — | ACU5050A | ServSwitch Wizard USB KVM Extender with Audio, **p. 60** |
| 122 m | Dual | VGA | USB | Dual | • | • | ACU8000A | ServSwitch Universal Extender |
| 122 m | Single | DVI | PS/2 | Dual | — | — | ACS2009A-R2 | ServSwitch DVI CATx KVM Extenders, **p. 59** |
| 122 m | Single | DVI | USB | Dual | — | — | ACS4001A-R2 | |
| 122 m | Dual | DVI | PS/2 | Dual | — | — | ACS2209A-R2 | |
| 122 m | Dual | DVI | USB | Dual | — | — | ACS4201A-R2 | |
| 122 m | Single | DVI | USB | Dual | — | — | ACS4002A-R2 | |
| 122 m | Single | DVI | USB | Dual | — | — | ACS4004A-R2 | |
| 198 m | Single | VGA | PS/2 | Dual | • | — | ACU1600A | ServSwitch Wizard Multimedia KVM Extender, **p. 58** |
| 198 m | Single | VGA | PS/2 | Single | — | — | ACU5010A | ServSwitch Wizard Extender Kits, **p. 58** |
| 198 m | Single | VGA | PS/2 | Single | — | — | ACU5011A | |
| 198 m | Single | VGA | PS/2 | Dual | — | — | ACU5013A | |
| 304.8 m | Single | VGA | PS/2 | Single | — | — | ACU1001A | ServSwitch Brand CAT5 KVM Extenders, **p. 56-57** |
| 304.8 m | Single | VGA | PS/2 | Single | — | • | ACU1002A | |
| 304.8 m | Single | VGA | PS/2 | Dual | — | • | ACU1008A | |
| 304.8 m | Single | VGA | PS/2 | Single | • | • | ACU1022A | ServSwitch Brand CAT5 KVM Extenders w/Serial Extension and Stereo Support, **p. 56-57** |
| 304.8 m | Single | VGA | PS/2 | Dual | • | • | ACU1028A | |
| 304.8 m | Single | VGA | PS/2 | Single | — | — | ACU2001A | ServSwitch Brand Single-Video CATx Extenders, **p. 56-57** |
| 304.8 m | Single | VGA | PS/2 | Dual | — | — | ACU2009A | |
| 304.8 m | Single | VGA | PS/2 | Single | • | • | ACU2022A | ServSwitch Brand Single-Video CATx Extenders with Serial and Audio, **p. 56-57** |
| 304.8 m | Single | VGA | PS/2 | Dual | • | • | ACU2028A | |
| 304.8 m | Dual | VGA | PS/2 | Single | — | — | ACU2201A-R2 | ServSwitch Brand Dual-Video CATx Extenders, **p. 56-57** |
| 304.8 m | Dual | VGA | PS/2 | Dual | — | — | ACU2209A | |

* ACU5002A connects a PS/2 console with a USB computer.

These charts are a simple overview of KVM Extension solutions. These products have a wide range of variables. To find the exact extension for your application, you should contact one of our Black Box experts.

## Buyer's Guide | KVM Extension over Copper (Continued)

For product details, see the page listed.

| Distance (Max.) | Heads | Video Type | Console | Access | Speaker /Mic | Serial | Product Code | Product Name |
|---|---|---|---|---|---|---|---|---|
| 1000 ft. | Dual | VGA | PS/2 | Single | • | • | ACU2222A-R2 | ServSwitch Brand Dual-Video CATx Extenders with Serial and Audio, **p. 56-57** |
| 1000 ft. | Dual | VGA | PS/2 | Dual | • | • | ACU2228A | |
| 1000 ft. | Single | VGA | PS/2 | Single | — | • | ACU5110A | ServSwitch Wizard Extender Kits with Skew Compensation, **58** |
| 1000 ft. | Single | VGA | PS/2 | Dual | — | • | ACU5114A | |
| 1000 ft. | Single | VGA | PS/2 | Single | • | • | ACU5112A | |
| 1000 ft. | Dual | VGA | PS/2 | Dual | • | • | ACU5122A | |
| 1000 ft. | Quad | VGA | PS/2 | Dual | • | • | ACU5142A | |
| 1000 ft. | Single | VGA | USB | Dual | — | — | ACU6001A | ServSwitch Brand CATx USB KVM Extenders, Single-Head VGA, **p. 52** |
| 1000 ft. | Single | VGA | USB | Dual | • | • | ACU6022A | |
| 1000 ft. | Dual | VGA | USB | Dual | — | — | ACU6201A | ServSwitch Brand CATx USB KVM Extenders, Dual-Head VGA, **p. 52** |
| 1000 ft. | Dual | VGA | USB | Dual | • | • | ACU6222A | |
| 1000 ft. | Single | VGA | PS/2 | Dual | — | — | ACU1049A | ServSwitch CAT5 KVM Switching Extender, **p. 55** |
| 1000 ft. | Single | VGA | Sun | Single | — | — | ACU1004A | ServSwitch Brand CAT5 KVM Extenders for Sun, **p. 55** |
| 1000 ft. | Single | VGA | Sun | Dual | — | — | ACU1005A | |
| 1000 ft. | Single | VGA | PS/2 | Single | — | — | ACU1006RA | Rackmount ServSwitch Brand CAT5 KVM Extender Hubs, **pp. 53-54** |
| 1000 ft. | Single | VGA | PS/2 | Single | — | — | ACU1012RA | |
| 1000 ft. | Single | VGA | PS/2 | Single | — | • | ACU1006SRA | |
| 1000 ft. | Single | VGA | PS/2 | Dual | — | — | ACU1006DRA | |
| 1000 ft. | Single | VGA | PS/2 | Dual | — | • | ACU1006DSRA | |
| 1000 ft. | Single | VGA | PS/2 | Single | • | • | ACU1006VRA | |
| 1000 ft. | Single | VGA | PS/2 | Dual | • | • | ACU1006DVRA | |

## Buyer's Guide | KVM Extension over Fiber

For product details, see the page listed.

| Fiber | Distance (Max.) | Heads | Video Type | Console | Access | Audio | Product Code | Product Name |
|---|---|---|---|---|---|---|---|---|
| MM SC | 400 m | Single | DVI-I | PS/2 | Dual | — | ACS253A-MM | ServSwitch DVI/VGA Fiber Extenders, **p. 71** |
| MM ST | 1 km | Single | VGA | PS/2 | Dual | — | ACS335A | ServSwitch Fiber Optic KVM Extenders, **p. 71** |
| MM ST | 1 km | Single | VGA | PS/2 | Dual | • | ACS335A-AS | |
| MM SC | 400 m | Single | DVI-D | USB | Single | — | ACS110A | ServSwitch DVI-D Plus USB KVM Extender Kits, **p. 68** |
| MM SC | 400 m | Dual | DVI-D | USB | Single | — | ACS120A | |
| MM SC | 400 m | Single | DVI-D | USB | Single | — | ACS112A | |
| MM SC | 400 m | Dual | DVI-D | USB | Single | — | ACS122A | |
| MM SC | 400 m | Single | VGA | PS/2 | Dual | • | ACS250A-R2 | ServSwitch Fiber KVM Extender II & II, **p. 70** |
| MM SC | 400 m | Single | DVI-I | USB | Dual | — | ACS253A-U-MM | ServSwitch DVI/VGA Fiber Extenders with USB, **p. 69** |
| MM SC | 2 km | Single | DVI-D | USB | Dual | • | ACS260A-U-MM | ServSwitch DVI-D USB KVM-over-Fiber Extender, **p. 67** |
| MM LC | 400 m | Single | DVI-D | PS/2 | Dual | — | ACS2009A-R2-MM | ServSwitch DVI Fiber Optic KVM Extenders, **p. 69** |
| MM LC | 400 m | Single | DVI-D | USB | Dual | | ACS4001A-R2-MM | |
| MM LC | 400 m | Dual | DVI-D | PS/2 | Dual | — | ACS2209A-R2-MM | |
| MM LC | 400 m | Dual | DVI-D | USB | Dual | — | ACS4201A-R2-MM | |
| SM SC | 10 km | Single | VGA | PS/2 | Dual | • | ACS251A-R2 | ServSwitch Fiber KVM Extender II & II, **p. 70** |
| SM SC | 10 km | Single | DVI-I | PS/2 | Dual | — | ACS253A-SM | ServSwitch DVI/VGA Fiber Extenders, **p. 71** |
| SM SC | 10 km | Single | DVI-I | USB | Dual | — | ACS253A-U-SM | ServSwitch DVI/VGA Fiber Extenders with USB, **p. 69** |
| SM LC | 10 km | Single | DVI-D | PS/2 | Dual | — | ACS2009A-R2-SM | ServSwitch DVI Fiber Optic KVM Extenders, **p. 69** |
| SM LC | 10 km | Single | DVI-D | USB | Dual | — | ACS4001A-R2-SM | |
| SM LC | 10 km | Dual | DVI-D | PS/2 | Dual | — | ACS2209A-R2-SM | |
| SM LC | 10 km | Dual | DVI-D | USB | Dual | — | ACS4201A-R2-SM | |

## ServSwitch DTX

# The IP KVM extender, matrix switch,

*ServSwitch DTX receiver (DTX5000-R):*
*top: front view; bottom: rear view*

- Extends a USB or PS/2 computer's KVM, audio, and USB 2.0 peripheral signals hundreds or even thousands of miles over an IP network to a workstation with one or two DVI-I monitors, speakers, and a USB or PS/2 keyboard and mouse.
- Features USB virtual media (VM) support.
- Connect up to four USB 2.0 devices to a receiver.
- Provides a seamless upgrade path from the ServSwitch Octet (**page 12**).
- Encrypts media streams for Secure Socket Layer (SSL) connections over a TCP/IP link.
- Using the extender's password-protected serial interface menu, you can configure network connections, change video settings, perform flash upgrades, configure hotkeys, and more.
- Supports PC, Sun™, and Mac® CPUs and works with Windows®, Redhat® Linux, Sun Solaris™, and Mac operating systems.
- The single-head components support resolutions up to 1280 x 1024 at 60 Hz. Dual-head components support resolutions up to 1920 x 1200 at 60 Hz!
- ✦✦ WARRANTY — 1 Year

The ServSwitch™ DTX extends KVM and multimedia long distance over any IP network, eliminating the distance limitations of copper and fiber optic extenders. It extends a USB or PS/2 CPU's KVM, audio, and USB peripheral signals hundreds or even thousands of miles over an IP network to a workstation with a DVI monitor, speakers, and a USB or PS/2 keyboard and mouse—or a mix of both.

Like a traditional KVM extender, the ServSwitch DTX has a transmitter unit for your CPU and a receiver unit for your workstation. As long as you have an IP link between your CPU and workstation, the DTX provides secure, high-quality connectivity. USB peripherals attached to the DTX at your workstation operate as if they're directly connected to the CPU, even if the CPU itself is continents away.

### Enables USB virtual media transfers.

Only the ServSwitch DTX features USB virtual media (VM) support. With USB VM, you can use the four USB ports on the DTX's receiver to connect to and access USB 2.0 CD-ROM drives, USB removable hard drives, or other USB peripherals. If you use a PS/2 keyboard and mouse with the receiver, all four USB ports can be used for USB devices. If you use a USB keyboard and mouse with the receiver, you can connect up to two USB devices to the receiver. All USB peripherals function as if they're attached directly to the CPU—and transfer media data at the maximum speed supported by your network. You can even hot-plug USB devices on the workstation end without any affect on the entire system.

### Multiplatform, multimedia KVM extension.

ServSwitch DTX works with just about any computer and operating system software. As a next-generation KVM extender, the DTX provides complete hardware KVM extension—no startup and configuration software is needed. When the receiver powers up in a point-to-point application, the system automatically establishes a connection between the transmitter and receiver. No user intervention is required. To view DTX system configuration, simply access the receiver's on-screen display (OSD).

The DTX displays 24-bit, 60-fps color video and supports resolutions up to 1920 x 1200. In addition, it also supports DVI and VGA for universal video compatibility, plus it delivers CD-quality sound for robust audio extension. For demanding multimedia applications, just connect the DTX to either Fast Ethernet or Gigabit Ethernet.

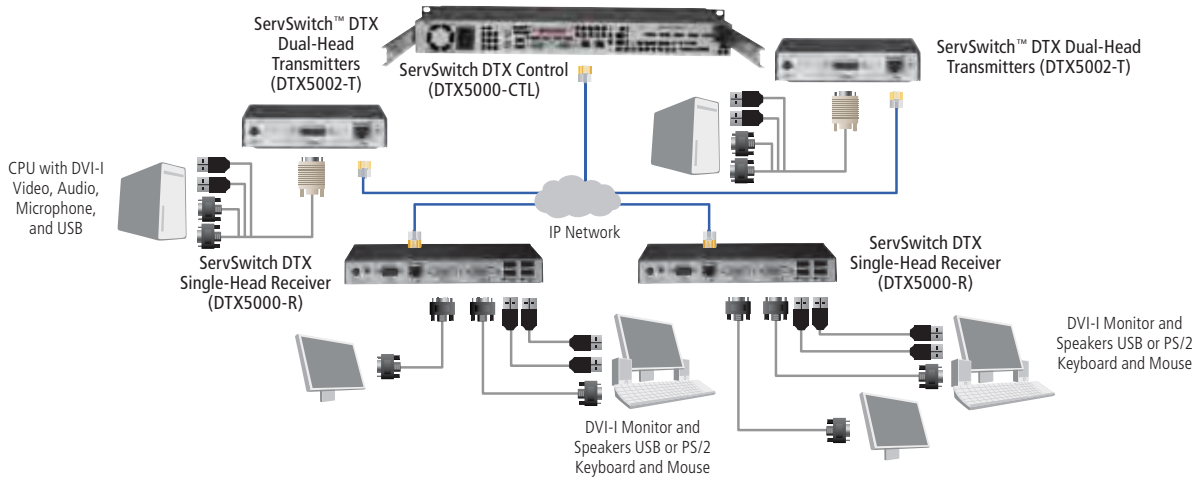
The ServSwitch DTX Single-Head, Inline Conversion components (DTX5001) support in-line conversion of video signals. In other words, if you input digital signals, you can output analog signals and vice versa.

The single-head and dual-head DTX components (DTX5000 and DTX5002) support both DVI and VGA, but cannot convert signals—what you put in is what you get out. Dual-head receivers enable you to use two DVI-I monitors at a remote workstation.

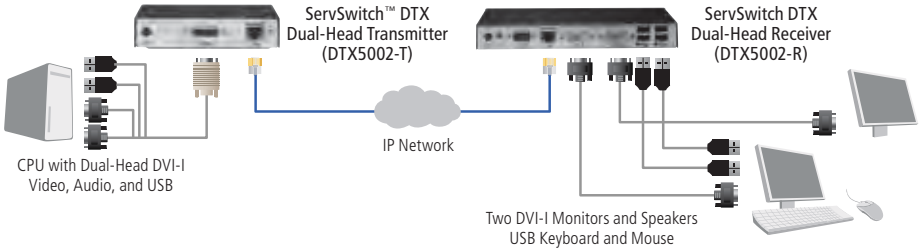
The ServSwitch DTX Control appliance is a KVM management system that enables matrix switching, control, and authentication capabilities. For more on management system technology, see **page 5**.

# and multimedia solution.

## KVM Matrix Switching with USB Virtual Media over IP


ServSwitch™ DTX Dual-Head Transmitters (DTX5002-T)
ServSwitch DTX Control (DTX5000-CTL)
ServSwitch™ DTX Dual-Head Transmitters (DTX5002-T)
CPU with DVI-I Video, Audio, Microphone, and USB
IP Network
ServSwitch DTX Single-Head Receiver (DTX5000-R)
ServSwitch DTX Single-Head Receiver (DTX5000-R)
DVI-I Monitor and Speakers USB or PS/2 Keyboard and Mouse
DVI-I Monitor and Speakers USB or PS/2 Keyboard and Mouse

## Dual-Monitor DVI Extension over IP


ServSwitch™ DTX Dual-Head Transmitter (DTX5002-T)
ServSwitch DTX Dual-Head Receiver (DTX5002-R)
IP Network
CPU with Dual-Head DVI-I Video, Audio, and USB
Two DVI-I Monitors and Speakers USB Keyboard and Mouse

### Keep your communications secure.

With the ServSwitch DTX, you can place your CPU in a safe location to protect it from the dust and vibrations of an industrial environment, and you can secure it from would-be thieves by locking it away in a cabinet or control room.

Furthermore, the DTX encrypts media streams for Secure Socket Layer (SSL) connections over a TCP/IP link. For more advanced control, just connect a networked computer running emulation software to the receiver. Using the extender's password-protected serial interface menu, you can then perform administrative and maintenance tasks for both the receiver and transmitter.

### Use it point-to-point, too.

You can also use the ServSwitch DTX in a point-to-point configuration as you would any other copper extender. Maximum distance is 100 m between the CPU and the KVM workstation.

**CE Approval** — Yes
**RoHS** — Yes

| Item | | Code |
|---|---|---|
| **For point-to-point KVM extension over IP, order…** | | |
| ServSwitch™ DTX Kits | Single-Head | DTX5000 |
| | Single-Head, Inline Conversion for Video | DTX5001 |
| | Dual-Head | DTX5002 |
| ✦ All kits include (1) transmitter and (1) receiver. The DTX5000 and DTX5001 include (1) autosensing power supply; the DTX5002 includes (2) power supplies. | | |
| **For individual ServSwitch DTX units, order…** | | |
| ServSwitch DTX Single-Head | Transmitter | DTX5000-T |
| | Receiver | DTX5000-R |
| ✦ The DTX5000-R includes receiver and (1) autosensing power supply. | | |
| ServSwitch DTX Single-Head, Inline Conversion for Video | | |
| | Transmitter | DTX5001-T |
| | Receiver | DTX5001-R |
| ✦ The DTX5001-R includes receiver and (1) autosensing power supply. | | |
| ServSwitch DTX Dual-Head | Transmitter | DTX5002-T |
| | Receiver | DTX5002-R |
| ✦ Dual-head units include either (1) transmitter or (1) receiver, (1) autosensing power supply. | | |
| **For KVM matrix switching over IP with single-head applications, order…** | | |
| ServSwitch DTX Control | | DTX5000-CTL |
| **For each DTX5000-T transmitter unit not connected to a CPU's USB port, you'll need…** | | |
| ServSwitch DTX Transmitter Power Supply | | DTX5000-PS |
| **To mount a receiver to the back of a flat-panel monitor or to a flat surface, order…** | | |
| ServSwitch DTX Receiver Mounting Plate | | DTX5000-MMK |
| **To connect a VGA monitor to the receiver, order…** | | |
| DVI-I Male–VGA HD15 Female Adapter *(See **www.blackbox.nl**)* | | FA461 |
| **To connect the transmitter to a CPU with a VGA video output, order…** | | |
| DVI-I Female–VGA HD15 Male Adapter *(See **www.blackbox.nl**)* | | FA462 |

## ServSwitch Agility DVI, USB, and Audio Extenders over IP

# Go farther, do more, with digital KVM

- New flexible topology for KVM extension.
- Delivers perfect digital video with no loss.
- No-loss compression minimizes bandwidth use while maximizing the user experience.
- Configure your network to suit your needs: point-to-point extension, KVM switching, single-target sharing, or multicasting.
- Features keyboard/mouse emulation, and emulation for other standard Human Interface Devices (HIDs), such as touch screens or flash drives.
- Distance is only limited by your network capabilities when you use network switches.
- Mounting options include rackmounting, desktop, and wallmounting.
- ✦✦WARRANTY — 2 Years

ServSwitch Agility™ DVI, USB, and Audio over IP Extenders enable you to do more and go farther with perfect digital video over nearly unlimited distances. Standard CATx cabling delivers IP traffic up to 100 m. For longer distances, add a network switch for an additional 100 m as many times as you want.

The flexible topology of the Agility gives you extension option applications that are brand new for KVM extenders. The Agility can be a KVM switch, a sharing portal, a DVI extender, and much, much more — it's up to you and how you decide to configure it.

### Point-to-point

In the most straightforward configuration, use the Agililty as a point-to-point KVM extender. Use CAT6 cable to connect a transmitter and a receiver to deliver perfect DVI, audio, and USB. If you need cable runs longer than 100 m, add another network switch every 100 m. You can configure this setup to go to multiple screens at one time or add new units for additional functionality.

### Switching network

Turn your network into a KVM switch with the Agility. When you change channels on the receiver unit, you switch DVI, audio, and USB while the transmitters not in use continue to emulate the previously attached devices. Create a KVM switch with as many users as you want — just keep adding receivers. With mixed channels, combine video, audio, and USB devices from different destinations.

### Single-target sharing

In this configuration, multiple users can share a single remote computer. Users can connect in three ways. View-only shows only the video feed. In Share Mode, an open connection is available for all users to use the connected devices at the same time. In Exclusive Mode, one user locks out the other users, preventing them from viewing or sharing the connection, with the exception of network administrators.

### Multicasting

This unique feature enables the Agility to multicast video and audio over an IP network to several receiving units. To prevent saturating the network, when, for example, a receiver isn't set up to explicitly receive a multicast, an installed network switch should feature Internet Group Management Protocol (IGMP) snooping. This prevents an IP switch from passing on multicast data onto every port, even if it's not part of the Agility system. IGMP snooping reduces the amount of traffic generated by Agility transmitter units that are configured for multicast operations, and prevent performance degradation and wasted network bandwidth.

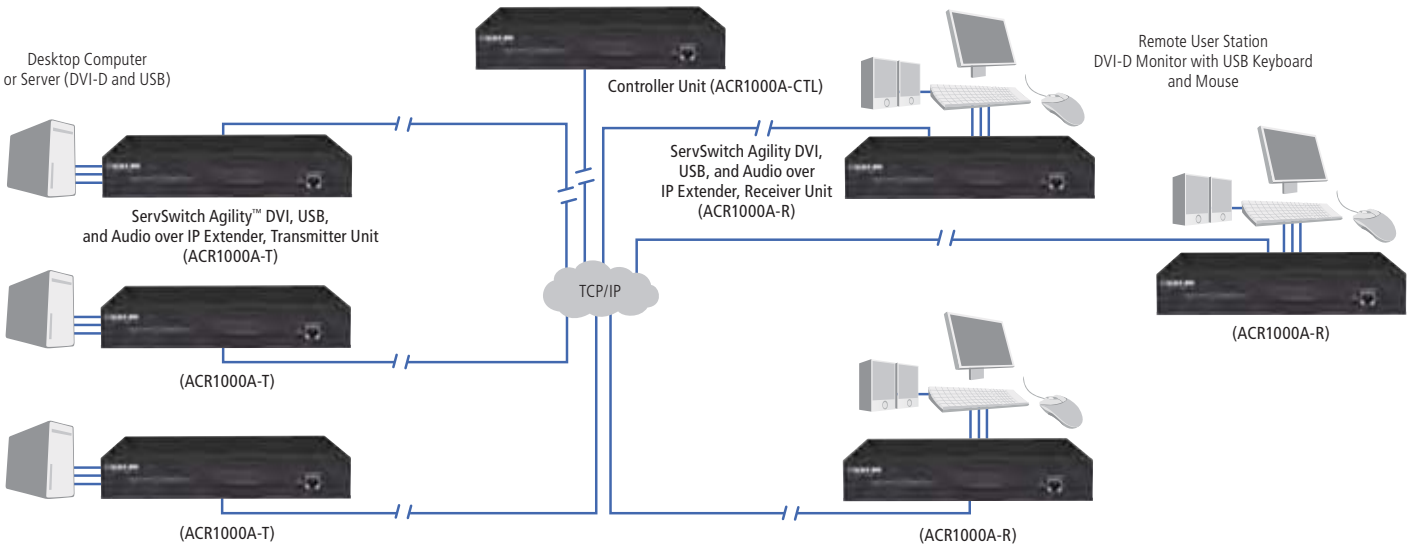
With the Agility and a network switch that includes IGMP snooping, multicast content to as many receivers as you want with no distance limits (depending on the network). This is an ideal configuration for digital signage applications.

### Management system: iPATH

The ServSwitch Agility Controller Unit offers a management suite enabling you to remotely and securely configure all the transmitter and receiver units. Define new content channels, restrict and enable access privileges, push control, disable specific USB device classes, and so on.

The iPATH™ system is a single box that plugs right into your network. Once plugged in, system administrators can begin configuring devices, users, and channels. The iPATH interface features a useful on-screen dashboard that gives you a current overview of the system. It is continually refreshed so you always have the most up-to-date system information.

# extension over IP.




## Possible applications:

- Distribute high-quality medical images to doctors and staff across large medical facilities. Agility uses standard Ethernet equipment, so the networking hardware won't need to be updated.
- In command and control room setups, multicast video and data to receiver units between LCD display walls. Users can interact with any of the computers using separate keyboard, mice, and DVI displays.
- Media post-production suites become collaborative with the Agility. Machine rooms store the media assets and hardware, and can distribute them throughout a post-production facility. Editors, producers, and directors can instantly communicate with animators and colorists.
- Get real flexibility for your digital signage network. All you need is an IP network running through the installation, and you can easily deliver content from one playout device via DVI. The number of screens is up to you.
- For another digital signage application, use the Agility to switch between multiple video sources.
- Deliver rich media experiences in public spaces, such as museums or libraries. The flexibility of the system makes reconfiguring your implementation a snap.

## TECH SPECS

**Hardware Compatibility** — All computers with DVI (digital only), USB, audio
Network switches: Support for IGMP
**CE Approval** — Yes
**Connectors** — ACR1000A-T: Video: (1) DVI-D F;
Audio: (2) 3.5mm audio F, input and output;
USB peripherals: (1) USB Type B F;
Serial: (1) RS-232 DB9 M AUX port;
Power: (1) 2.5-mm DC jack;
Network: (1) RJ-45, 1 Gig Network (CAT6 recommended);
ACR1000A-R: Video: (1) DVI-D F;
Audio: (2) 3.5-mm audio F, Line in/Mic in and Line out;
USB peripherals: (4) USB Type A F;
Serial: (1) RS-232 DB9 M AUX port;
Power: (1) 2.5-mm DC jack;
Network: (1) RJ-45, 1 Gig Network (CAT6 recommended);
**Size** — Per unit: 1.75"H x 7.9"W x 4.8"D (4.4 x 20.1 x 12.2 cm)
**Weight** — Per unit: 1.65 lb. (0.75 kg)

| Item | Code |
|---|---|
| ServSwitch Agility DVI, USB, and Audio Extenders over IP | |
| Kit | ACR1000A |
| ✦ Includes (1) ServSwitch Agility Transmitter, (1) ServSwitch Agility Receiver, (2) power adapters (one for each of the components), (2) 6-ft. power cords, (1) 5.7-ft. combined DVI-D and USB cable, (2) 10-ft. 3.5-mm audio cables, (1) 6.5-ft. serial null-modem cable F/F (upgrade cable), (8) self-adhesive rubber feet, CD-ROMs with user manuals, and quick-start guides. | |
| Transmitter | ACR1000A-T |
| ✦ Includes (1) ServSwitch Agility Transmitter, (1) power adapter, (1) 6-ft. power cord, (1) 5.7-ft. combined DVI-D and USB cable, (2) 10-ft. (3-m) 3.5-mm audio cables, (1) 6.5-ft. serial null-modem cable F/F (upgrade cable), (4) self-adhesive rubber feet, CD-ROM with user manual, and a Quick-Start guide. | |
| Receiver | ACR1000A-R |
| ✦ Includes (1) ServSwitch Agility Receiver, (1) power adapter, (1) 6-ft. (1.8-m) power cord, (4) self-adhesive rubber feet, CD-ROM with user manual, and a Quick-Start guide. | |
| You also need… | |
| ServSwitch Agility Controller Unit | ACR1000A-CTL |
| You may also need… | |
| Rackmount Kit | RMK2004 |

## ServSwitch Brand CATx USB KVM Extenders

Send high-resolution VGA video and USB signals over CAT5 or higher cable.

- Extend USB and VGA signals over CATx cable up to 300 m.
- Support high-resolution video: 1600 x 1200 at 60 Hz over 200 m or 1280 x 1024 at 75 Hz over 300 m.
- Fully integrated skew compensation cancels color shift and enhances image sharpness.
- Optional bidirectional stereo audio (16-bit digitized) support for high-quality, low-noise audio extension.
- Surge protection on each CATx port and power supply unit provide overvoltage detection.
- ✦✦ WARRANTY — 1 Year

*ACU6001A: front view*

*ACU6001A: rear view*

*ACU6021A: front view*

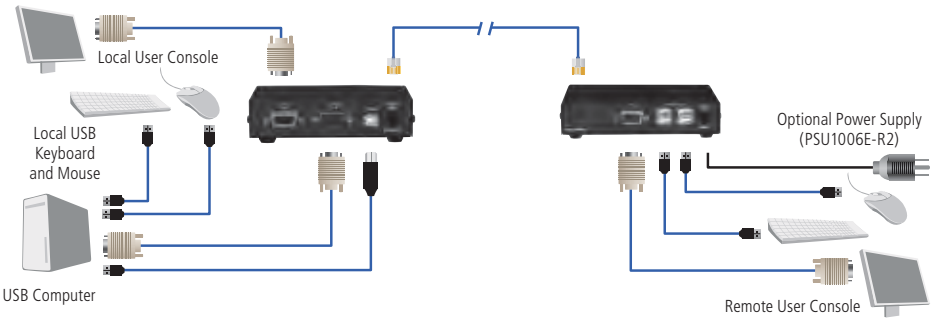
*ACU6021A: rear view*

Each ServSwitch Brand CATx USB KVM Extender system includes a local unit that attaches to the CPU (or a ServSwitch) and a remote unit that connects the user's KVM console. You can also plug in a monitor on the local side.

Choose from models that extend single- or dual-head video with or without serial and bidirectional stereo audio signals. A CATx cable is required for each video channel between local and remote ends.

All extenders deliver crystal-clear video. Additionally, the extenders feature emulated DDC on the local units to ensure compatibility with multihead graphics cards. The remote units feature transparent DDC, reading DDC tables from all attached monitors, then transferring and storing data in the local unit to support non-standard displays.

Independent low-frequency and high-frequency cable equalization control ensures optimum video tuning across different cable types, so installation is not costly. Control and video tuning are carried out using the remote keyboard with settings stored in EEPROM memory.




The transparent serial port on the audio-enabled models enables you to extend any serial device up to 19.2 kbps. Extend one device requiring handshaking lines or up to three simple serial devices with no handshaking.

Installing ServSwitch Brand CATx USB KVM Extenders is a plug-and-play procedure with nothing to configure. Local video output enables dual-access operation when a local keyboard and mouse are connected directly to the CPU. With a simple hotkey command, you can switch to a private mode, leaving the remote video dark.

In most applications, the local unit draws its power from the USB interface but, if necessary, it also can be powered externally by the optional Power Supply (PSU1006E-R3). The remote unit requires an external power supply, which is included.

**CE Approval** — Yes
**RoHS** — Yes

Compact in design, the extender units fit easily on a desktop. Or three units can be rack-mounted in 1U of space within a 19" standard cabinet or rack using the optional Rackmount Kit (RMK19U-X3).

| Item | Code |
|---|---|
| ServSwitch™ Brand CATx USB KVM Extenders | |
| Single-Head VGA | |
| Standard | ACU6001A |
| with Serial and Audio | ACU6022A |
| Dual-Head VGA | |
| Standard | ACU6201A |
| with Serial and Audio | ACU6222A |

✦ Include (1) local unit, (1) remote unit, (1) 5-V DC power supply for remote unit, (1) U.S. power cord, USB and video cables to connect local unit to PC. ACU6222A also includes (1) serial cable and (1) audio cable.

You may also need…

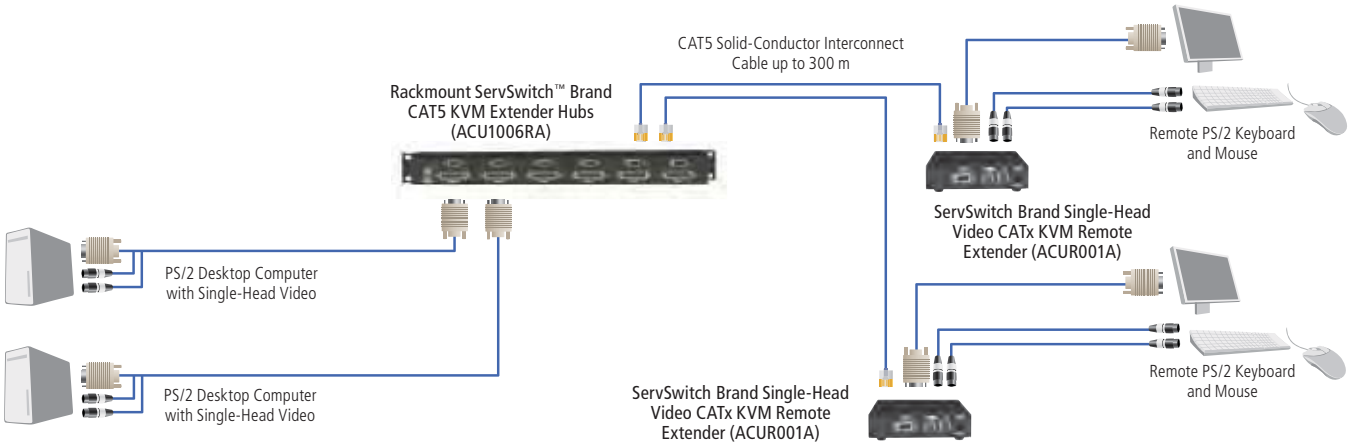
| | |
|---|---|
| Power Supply | PSU1006E-R3 |
| Rackmount Kit for CATx Extenders | RMK19U-X3 |

## Rackmount ServSwitch Brand CAT5 KVM Extender Hubs and CAT5/CATx Remote Units

### Extend your KVM signals up to 300 meter and add switching, audio, serial devices, and multiple monitors at the far end!

*Top: left: ACUREM; right: ACUMREM; middle: ACU1006RA, front view; bottom: ACU1006RA, rear view*

*Top left: ACUWREM; top right: ACUVREM; bottom: ACU1006DVRA*


CAT5 Solid-Conductor Interconnect Cable up to 300 m
Rackmount ServSwitch™ Brand CAT5 KVM Extender Hubs (ACU1006RA)
Remote PS/2 Keyboard and Mouse
ServSwitch Brand Single-Head Video CATx KVM Remote Extender (ACUR001A)
PS/2 Desktop Computer with Single-Head Video
PS/2 Desktop Computer with Single-Head Video
Remote PS/2 Keyboard and Mouse
ServSwitch Brand Single-Head Video CATx KVM Remote Extender (ACUR001A)

- Send keyboard, monitor, and mouse signals — plus optional serial data — up to 304.8 m from a CPU or ServSwitch.
- Or just send KVM signals 45.7 m with the compact Micro models (**p. 54**).
- It's like getting 6 or 12 extenders in one rackmountable box!
- With dual-access hubs, you can attach a local KVM or KVM switch to each CPU.
- Bidirectional stereo audio available, too.
- Feature built-in surge protection with a clamping voltage of 15 volts.
- Fully adjustable video equalization for the best possible video quality.
- ✦✦ **WARRANTY** — 1 Year

* *NOTE: Units that support skew compensation work with CATx cable.*

Our extender hubs make it easy to put your CPUs or ServSwitch KVM switch where you want them—*and* get rackmount convenience.

These units combine 6 or 12 local hubs into one rackmount chassis. Just attach your CPUs with our Coax CPU Cable (EHN230, **www.blackbox.nl**), then connect remote units via already installed CAT5 UTP (EYN840A-1000). Some remote units support CAT5e and CAT6, too.*

The hubs and remote units require no software, are operating system independent, and work with a variety of hardware, including Microsoft® IntelliMouse®. The hubs perform complete PS/2 keyboard/mouse emulation for the attached CPUs.

The hubs and remote units also feature built-in surge protection to defend your UTP link side against surges and spikes.

First, choose a hub for your application from the price block (at **right**). Then use the Buyer's Guide on the **page 54** to order a remote unit for each active hub port.

The Buyer's Guide shows which remote is compatible with which hubs and which local extenders. If you have questions, please call our FREE Tech Support at **030-2417799**.

**CE Approval** — ACU1006DSRA, ACU1006VRA, ACU1006DVRA
**RoHS** — Yes

| Item | Code |
|---|---|
| First, choose a hub for your application… | |
| Rackmount ServSwitch Brand CAT5 KVM Extender Hubs | |
| 6-Port Standard | ACU1006RA |
| 12-Port Standard | ACU1012RA |
| 6-Port with Serial | ACU1006SRA |
| 6-Port Standard Dual-Access | ACU1006DRA |
| 6-Port Dual-Access with Serial | ACU1006DSRA |
| 6-Port with Serial and Bidirectional Stereo Audio | ACU1006VRA |
| 6-Port Dual-Access with Serial and Bidirectional Stereo Audio | ACU1006DVRA |
| …then order a remote unit for each active hub port. See the Buyer's Guide on **page 54**. | |

## Buyer's Guide | ServSwitch Brand CAT5 KVM Extender Hub Remote Units

For more product details, go to **blackbox.nl**.

| Chassis | Serial Devices | Audio Devices | Distance | Maximum Resolution | Cable | Video Type | Compatibility | | Product Code |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Hubs (**p. 53**) | Local extender units (**pp. 56–57**) | |
| Full | — | — | 304.8 m | 1600 x 1280 @ 200 ft. (61 m), 1280 x 1024 @ 300 ft. (91.4 m), 1024 x 768 @ 1000 ft. (304.8 m) | CAT5 | Single-head | ACU1006RA, ACU1006DRA, ACU1012RA | ACU1001A, ACU1009A | ACUREM |
| Full | — | — | 304.8 m | 1600 x 1280 @ 200 ft. (61 m), 1280 x 1024 @ 300 ft. (91.4 m), 1024 x 768 @ 1000 ft. (304.8 m) | CAT5 | Single-head | ACU1006RA, ACU1012RA | ACU1001A | ACUREMSW |
| Micro | — | — | 45.7 m | 1280 x 1024 @ 150 ft. (45.7 m) | CAT5 | Single-head | ACU1006RA, ACU1006DRA, ACU1012RA | ACU1001A, ACU1009A, ACU3001A, ACU3009A | ACUMREM |
| Micro Hub | — | — | 45.7 m | 1280 x 1024 @ 150 ft. (45.7 m) | CAT5 | Single-head | ACU1006RA, ACU1006DRA, ACU1012RA | ACU1001A, ACU1009A, ACU3001A, ACU3009A | ACU1006MRA (6) Micro Units (ACUMREM), rackmounted |
| Full | • | — | 304.8 m | 1600 x 1280 @ 200 ft. (61 m), 1280 x 1024 @ 300 ft. (91.4 m), 1024 x 768 @ 1000 ft. (304.8 m) | CAT5 | Single-head | ACU1006SRA, ACU1006DSRA | ACU1002A | ACUSREM |
| Full | • | • | 304.8 m | 1600 x 1280 @ 200 ft. (61 m), 1280 x 1024 @ 300 ft. (91.4 m), 1024 x 768 @ 1000 ft. (304.8 m) | CAT5 | Single-head | ACU1006VRA, ACU1006DVRA | ACU1022A, ACU1028A | ACUVREM |
| Micro | • | • | 45.7 m | 1280 x 1024 @ 150 ft. (45.7 m) | CAT5 | Single-head | ACU1006VRA | ACU1022A, ACU1028A, ACU3022A | ACUWREM |
| Micro Hub | • | • | 45.7 m | 1280 x 1024 @ 150 ft. (45.7 m) | CAT5 | Single-head | ACU1006VRA, ACU1006DVRA | ACU1022A, ACU1028A, ACU3022A | ACU1006MRVA (6) Serial and Stereo Units (ACUWREM), rackmounted |
| Micro | — | — | 45.7 m | 1280 x 1024 @ 150 ft. (45.7 m) | CAT5 | Dual-head | ACU1006RA, ACU1006DRA, ACU1012RA | ACU3201A, ACU3209A | ACUMR02A |
| Micro | • | • | 45.7 m | 1280 x 1024 @ 150 ft. (45.7 m) | CAT5 | Dual-head | ACU1006RA, ACU1006DRA | ACU3222A, ACU3228A | ACUMRA02A |
| Micro Hub | — | — | 45.7 m | 1280 x 1024 @ 150 ft. (45.7 m) | CAT5 | Dual-head | ACU1006VRA | ACU1028A, ACU1022A, ACU3022A | ACU1006MRVA |
| Full | — | — | 304.8 m | 1600 x 1200 @ 656 ft. (200 m), 1280 x 1024 @ 984 ft. (300 m) | CATx | Single-head | ACU1006RA, ACU1006DRA, ACU1012RA | ACU1001A, ACU1009A, ACU3001A, ACU3009A, ACU1049A, ACU2001A, ACU2009A | ACUR001A |
| Full | • | • | 304.8 m | 1600 x 1200 @ 656 ft. (200 m), 1280 x 1024 @ 984 ft. (300 m) | CATx | Single-head | ACU1006VRA, ACU1006DVRA | ACU1022A, ACU1028A, ACU3022A, ACU2022A, ACU2028A | ACURA001A |
| Full | — | — | 304.8 m | 1600 x 1200 @ 656 ft. (200 m), 1280 x 1024 @ 984 ft. (300 m) | CATx | Dual-head | ACU1006RA, ACU1006DRA, ACU1012DRA | ACU2201A, ACU2201A-R2, ACU3201A, ACU3029A | ACUR002A |
| Full | • | • | 1000 ft. (304.8 m) | 1600 x 1200 @ 656 ft. (200 m), 1280 x 1024 @ 984 ft. (300 m) | CATx | Dual-head | ACU1006VRA, ACU1006DVRA | ACU2222A, ACU2222A-R2, ACU228A, ACU3222A, ACU3228A | ACURA002A |
| Full | — | — | 304.8 m | 1600 x 1200 @ 656 ft. (200 m), 1280 x 1024 @ 984 ft. (300 m) | CATx | Quad-head | ACU1006RA, ACU1006DRA, ACU1012RA | ACU1001A, ACU1009A, ACU3001A, ACU3009A, ACU1049A, ACU2001A, ACU2009A | ACUR004A |
| Full | • | • | 304.8 m | 1600 x 1200 @ 656 ft. (200 m), 1280 x 1024 @ 984 ft. (300 m) | CATx | Quad-head | ACU1006VRA, ACU1006DVRA | ACU1022A, ACU1028A, ACU3022A, ACU2022A, ACU2028A | ACURA004A |

## ServSwitch Brand CAT5 KVM Extenders for Sun

Extend Sun KVM signals up to 300 meter!

PLATFORMS: Sun™ | CONNECTORS: 8-Pin, VGA | CABLE: CAT5

*ACU1004A*

- Place your Sun keyboard, monitor, and mouse up to 304.8 m from a CPU or ServSwitch.
- Provides 1600 x 1280 resolutions at 60.9 m, 1152 x 900 resolutions at 121.9 m, or 1024 x 768 resolutions at 304.8 m)
- Use easy-to-handle CAT5 UTP cable.
- Intelligent keyboard and mouse emulation, so your remote CPUs won't lock up even if the keyboard or interconnect cable is unplugged.
- Dual access enables you to have a local control station near the CPU or ServSwitch plus a remote station up to 300 m away.
- Feature built-in surge protection for the CAT5 link.
- ✦✦ WARRANTY — 1 Year

CE Approval — Yes
RoHS — Yes

| Item | Code |
|---|---|
| **Choose the extender kit for your application…** | |
| ServSwitch Brand CAT5 KVM Extenders for Sun | |
| Single-Access Kit | ACU1004A |
| Dual-Access Kit | ACU1005A |
| **To connect remote units at a 20% savings, order…** | |
| CAT5 Unshielded 100-MHz Solid Bulk Cable, 24 AWG , 4-Pair, Gray, 1000-ft. (304.8-m) Spool *(For plenum applications, other colors, or boxed cable, see **website**.)* | EYN840A-1000 |
| **To connect the extenders to a nearby patch panel or wall jack at a 20% savings, order…** | |
| Category 5 Patch Cable, 100-MHz, 4-Pair, Straight-Pinned, PVC, Beige | |
| 10-ft. (3.0-m) | EYN556MS-0010 |
| 15-ft. (4.5-m) | EYN556MS-0015 |

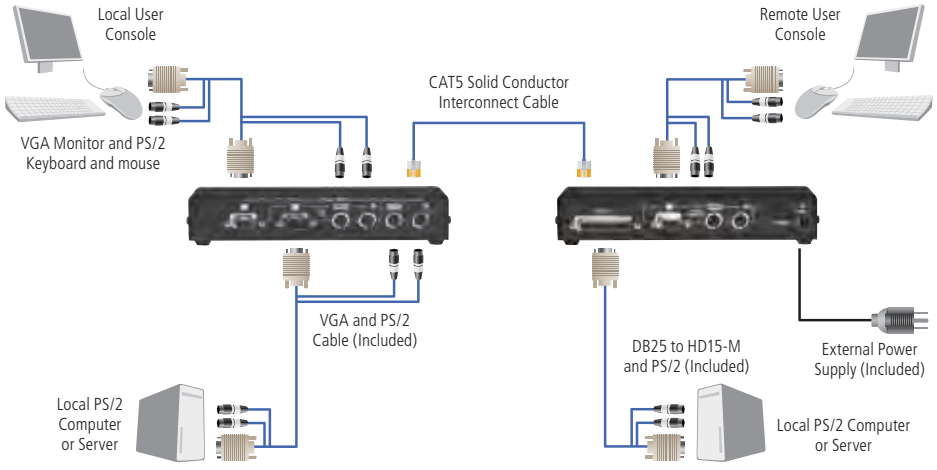
## ServSwitch CAT5 KVM Switching Extender

Now you can transmit vibrant and sharp video nearly 300 meter—and get inexpensive switching, too!

PLATFORMS: PC | CONNECTORS: PS/2, VGA | CABLE: CAT5 | SWITCHING: Hotkey

- Enables you to place your remote workstation 300 m away.
- Integrated KVM switch enables you to connect a CPU to the remote unit.
- Video resolutions up to 1280 x 1024 over 120 m.
- Double Private Mode locks out the second workstation, preventing conflicts.
- Adjustable video equalization compensates for signal degradation over long distances.
- Full surge protection on the CAT5 interface.
- ✦✦ WARRANTY — 1 Year

**Built-in surge protection!**


Local User Console
VGA Monitor and PS/2 Keyboard and mouse
CAT5 Solid Conductor Interconnect Cable
Remote User Console
VGA and PS/2 Cable (Included)
Local PS/2 Computer or Server
DB25 to HD15-M and PS/2 (Included)
External Power Supply (Included)
Local PS/2 Computer or Server

CE Approval — Yes
RoHS — Yes

| Item | Code |
|---|---|
| ServSwitch CAT5 KVM Switching Extender | ACU1049A |
| **To connect the local and remote units at a 20% savings, order…** | |
| CAT5 Unshielded 100-MHz Solid Bulk Cable, 24 AWG, 4-Pair, Gray, 1000-ft. (304.8-m) Spool *(For other colors or boxed cable, see **website**.)* | |
| PVC | EYN840A-1000 |
| Plenum | EYN860A-B |

## ServSwitch Brand CATx Single- or Dual-Access KVM Extenders

# Send one or two high-quality video channels

*ACU2028A: top: remote unit, rear view; bottom: local unit, rear view*

**Built-in surge protection!**

*ACU2009A: top: remote unit, rear view; bottom: local unit, rear view*

- CAT5 extender kits support extensions of 1600 x 1280 video up to 60.9 m; CATx kits support extensions of 1600 x 1200 video up to 200 m from your CPU. Go even farther at lower resolutions!
- Place your keyboard, monitor, and mouse station far from your CPU and get clear video at the remote end.
- All dual-access units have single/dual local video outputs.
- Dual-video versions suit CPUs with multihead video applications.
- Serial models are available for transmitting touch screen and other RS-232 serial port data.
- Audio versions for CATx transmit near-digital-quality audio from the CPU to the remote end.
- CATx remote units include built-in skew compensator.
- All monitor skew compensation can be fine-tuned easily via keyboard hotkey commands—even at long distances and high resolutions.
- Video settings store in nonvolatile memory.
- Keyboard/mouse emulation provides keep-alive functionality.
- Flash-upgradable remote units.
- ACU2201A-R2 and ACU2222A-R2 extender kits feature DDC support and higher video bandwidth, and can be flash upgraded on the local end.
- To pair individual extender remote units with hub extenders or to set up quad-video extensions, see our CATx extenders on **pages 53-54**.
- ✦✦ WARRANTY — 1 Year

### What's included

All kits:
- Local unit
- Remote unit
- Cable from CPU to local unit
- Video input cable (dual-access units)
- 9-volt power supply and power cord

Kits with serial also have:
- Serial cable

Kits with audio also have:
- Audio cable

Extend one or two video channels over UTP cable with the ServSwitch™ Brand CAT5 KVM Extenders or ServSwitch Brand Single- or Dual-Video CATx KVM Extenders. They enable you to separate your VGA monitor, keyboard, and mouse from a CPU at distances much farther than what's possible with ordinary KVM cables.

### Serial and audio support, too.

If you also need to extend RS-232 port data, for example, to connect serial devices such as touch screens, order the KVM extenders featuring serial support. There are also versions for extending high-quality sound along with serial signals. They're particularly useful in applications in which you need to hear audio alerts on remote monitors.

All extender kits include local and remote units, and CPU cables; dual-access units also include monitor cables. Kits that support serial and/or audio extension also come with serial and/or audio cables. Local and remote components communicate over a single dedicated UTP cable, and keyboard, mouse, and video signals—as well as serial and audio signals on models that support them—are fully buffered to ensure consistent remote operation of your PC.

With the dual-access models, you can attach an additional monitor, keyboard, and mouse to the local unit. You can then operate the PC from either the local or remote user station. These stations share access on a "first-come, first-served" basis.

### Ultimate video at the remote end.

You can expect clear, high-resolution video at the remote end with these KVM extenders. Remote units feature a built-in skew compensator that removes unsightly color shadows by delaying some color signals so that all color signals arrive at the same time at the remote end.

With the CATx extender kits, simple keyboard hotkey commands enable you to fine-tune the monitor image to fix skew attenuation and losses. Use keyboard controls to equalize red, green, and blue to compensate for the differing pair lengths found in CAT5e and higher cables. Independent low-frequency (LF) and high-frequency (HF) equalization adjustment ensure optimum video tuning. Preset modes also help you find the right image balance quickly, and Quick Skew features help make video tuning nearly automatic.

The precise equalization on the CATx extenders enable resolution of 1280 x 1024 up to 300 m or 1600 x 1200 resolution up to 200 m.

With the CAT5 extender kits, you can achieve 1600 x 1280 resolution up to 60.9 m, 1280 x 1024 resolution at 91.4 m, or 1024 x 768 resolution at 304.8 m.

PLATFORMS: PC | CONNECTORS: PS/2, VGA | CABLE: CAT5, 5e, 6 | PERIPHERALS: Spkr./Mic, Serial, Touch Screen | FEATURES: FLASH Upgradable

# to a remote site over CAT5 or higher cable.

*ACU1009A: top: local unit, rear view; bottom: remote unit, rear view*

## TECH SPECS

**Compatibility** — Keyboard: PS/2, PC/AT® (with optional AC244A and FA222-R2); Video: VGA, Super VGA, XGA, UXGA; Mouse: PS/2 mouse only (user)
**Clamping Voltage** — 15 volts
**Resolution (Maximum)** — CAT5 versions: 1600 x 1280: 200 ft. (60.9 m); 1280 x 1024: 300 ft. (91.4 m); 1024 x 768: 1000 ft. (304.8 m); CATx versions: 1600 x 1200: 656.1 ft. (200 m); 1280 x 1024: 984.2 ft. (300 m); For all versions, higher resolutions may be possible at shorter distances
**CE Approval** — Yes
**RoHS** — Yes
**Connectors** — ACU1001A, ACU2001A: Local: (1) RJ-45, (1) HD15 M, (2) 6-pin mini DIN F; Remote: (1) RJ-45, (1) HD15 F, (2) 6-pin mini DIN F; ACU1002A: Local: (1) RJ-45, (1) HD15 M, (2) 6-pin mini DIN F, (1) DB9 F; Remote: (1) RJ-45, (1) HD15 F, (2) 6-pin mini DIN F, (1) DB9 F; ACU1009A, ACU2009A: Local: (1) RJ-45, (1) HD15 M, (1) HD15 F, (4) 6-pin mini DIN F; Remote: (1) RJ-45, (1) HD15 F, (2) 6-pin mini DIN F; ACU1008A: Local: (1) RJ-45, (1) HD15 M, (1) HD15 F, (4) 6-pin mini DIN F, (1) DB9 F; Remote: (1) RJ-45, (1) HD15 F, (2) 6-pin mini DIN F, (1) DB9 F; ACU1022A, ACU1028A: Local: (1) RJ-45, (1) HD15, (2) 6-pin mini DIN F, (1) 3.5-mm barrel jack, (1) DB9 F; Remote: (1) RJ-45, (1) HD15, (2) 6-pin mini DIN F, (1) 3.5-mm barrel jack, (1) DB9 F; ACU2022A: Local: (1) RJ-45, (1) HD15 M, (2) 6-pin mini DIN F, (2) 3.5-mm audio, (1) DB9 F; Remote: (1) RJ-45, (1) HD15 F, (2) 6-pin mini DIN F, (2) 3.5-mm audio, (1) DB9 F; ACU2028A: Local: (1) RJ-45, (1) HD15 M, (1) HD15 F, (4) 6-pin mini DIN F, (2) 3.5-mm audio, (1) DB9 F; Remote: (1) RJ-45, (1) HD15 F, (2) 6-pin mini DIN F, (2) 3.5-mm audio, (1) DB9 F; ACU2201A-R2: Local: (2) RJ-45, (1) DB25 F, (1) HD15 M; Remote: (2) RJ-45, (2) HD15 F, (2) 6-pin mini DIN F; ACU2209A: Local: (2) RJ-45, (1) HD15 M, (2) HD15 F, (1) DB25 F, (2) 6-pin mini DIN F; Remote: (2) RJ-45, (2) HD15 F, (2) 6-pin mini DIN F; ACU2222A-R2: Local: (2) RJ-45, (1) HD15 M, (1) DB25 F, (2) 3.5-mm audio, (1) DB9 F; Remote: (2) RJ-45, (2) HD15 F, (2) 6-pin mini DIN F, (2) 3.5-mm audio, (1) DB9 F; ACU2228A: Local: (2) RJ-45, (1) HD15 M, (2) HD15 F, (1) DB25 F, (2) 6-pin mini DIN F, (2) 3.5-mm audio, (1) DB9 F; Remote: (2) RJ-45, (2) HD15 F, (2) 6-pin mini DIN F, (2) 3.5-mm audio, (1) DB9 F
**Power** — Local units: From the PC; Remote units: 100–240 VAC, 50–60 Hz, external, autosensing, with IEC 320 connector
**Size** — ACU1001A–ACU1002A, ACU1008A–ACU1009A, ACU1022A, ACU1028A: Both local and remote units: 1.4"H x 7.8"W x 3.9"D (3.6 x 19.8 x 9.9 cm); ACU2001A, ACU2209A, ACU2228A: Local units: 1.4"H x 3.9"W x 7.8"D (3.6 x 9.9 x 19.8 cm); Remote units: 1.1"H x 5.7"W x 5.5"D (2.8 x 14.5 x 14 cm); ACU2022A, ACU2028A: Local units: 1.7"H x 3.9"W x 7.8"D (4.3 x 9.9 x 19.8 cm); Remote units: 1.7"H x 5.7"W x 5.5"D (4.3 x 14.5 x 14 cm); ACU2201A-R2: Local unit: 1.1"H x 5.8"W x 4.3"D (2.8 x 14.7 x 10.9 cm); Remote unit: 1.7"H x 5.7"W x 5.5"D (4.3 x 14.5 x 14 cm); ACU2222A-R2: Local unit: 1.6"H x 5.7"W x 4.3"D (4.1 x 14.5 x 10.9 cm); Remote unit: 1.7"H x 5.7"W x 5.5"D (4.3 x 14.5 x 14 cm)

| Item | Code |
|---|---|
| **For point-to-point extension for one monitor over CAT5 cable, order…** | |
| ServSwitch Brand CAT5 KVM Extenders | |
| Single-Access Kit | ACU1001A |
| Dual-Access Kit | ACU1009A |
| **For point-to-point extension for one monitor *and* serial signals over CAT5 cable, order…** | |
| ServSwitch Brand CAT5 KVM Extenders with Serial | |
| Single-Access Kit | ACU1002A |
| Dual-Access Kit | ACU1008A |
| **For point-to-point extension for one monitor *and* serial and audio signals over CAT5 cable, order…** | |
| ServSwitch Brand CAT5 KVM Extenders with Serial Extension and Stereo Audio | |
| Single-Access Kit | ACU1022A |
| Dual-Access Kit | ACU1028A |
| **For point-to-point extension for one monitor over CAT5, CAT5e, or CAT6 cable, order…** | |
| ServSwitch Brand Single-Video CATx KVM Extenders | |
| Single-Access Kit | ACU2001A |
| Dual-Access Kit | ACU2009A |
| **For point-to-point extension for one monitor *and* serial and audio signals over CAT5, CAT5e, or CAT6 cable, order…** | |
| ServSwitch Brand Single-Video CATx KVM Extenders with Serial and Audio | |
| Single-Access Kit | ACU2022A |
| Dual-Access Kit | ACU2028A |
| **For point-to-point extension for two monitors over CAT5, CAT5e, or CAT6 cable, order…** | |
| ServSwitch Brand Dual-Video CATx KVM Extenders | |
| Single-Access Kit | ACU2201A-R2 |
| Dual-Access Kit | ACU2209A |
| **For point-to-point extension of two monitors and serial and audio signals over CAT5, CAT5e, or CAT6 cable, order…** | |
| ServSwitch Brand Dual-Video CATx KVM Extenders with Serial and Audio | |
| Single-Access Kit | ACU2222A-R2 |
| Dual-Access Kit | ACU2228A |
| **To rackmount an extender unit, order…** | |
| 19" Rackmount Kit for a Local Unit | RMK19U-R2 |
| for a Remote Unit | RMK19U-X3 |
| **To flash upgrade a remote unit, order…** | |
| Flash Cable for CAT5 and CATx Remote Extender Units | ACUFLH |
| **To connect an AT style computer, order…** | |
| AT→PS/2 Mouse GHOST Emulator *(For details, see **p. 80**.)* | AC244A |
| 5-Pin DIN Male to 6-Pin Mini DIN Female Keyboard Adapter | FA222-R2 |

« Local and Remote Extender Hubs, pp. 53-54.

## ServSwitch Wizard Extender Kits with Skew Compensation

Discover the versatility of high-end KVM extension over CAT5, CAT5e, or CAT6 cable.

PLATFORMS: PC | CONNECTORS: PS/2, VGA | CABLE: CAT5, 5e, 6 | PERIPHERALS: Serial, Touch Screen | FEATURES: FLASH Upgradable

*ACU5110A*

- Maximum resolutions of 1600 x 1200 at 60 Hz at distances of 200 m or 1280 x 1024 at 60 Hz at the full distance of 300 m.
- ✦✦ WARRANTY — 1 Year

CE Approval — Yes
RoHS — Yes

| Item | | Code |
|---|---|---|
| ServSwitch Wizard™ Extender Kits with Skew Compensation | | |
| Serial | Single-Access | ACU5110A |
| | Dual-Access | ACU5114A |
| Serial and Bidirectional Stereo Audio | Single-Access | ACU5112A |
| | Dual-Access | ACU5116A |
| | Dual-Access, Dual-Head | ACU5122A |
| | Dual-Access, Quad-Head | ACU5142A |

## ServSwitch Brand Mini CATx KVM Extenders with Automatic Skew Compensation

Extend KVM transmissions to 304 meter with skew compensation over CAT5e or CAT6 UTP.

PLATFORMS: PC, Sun™, Mac® | CONNECTORS: PS/2, USB, VGA | CABLE: CAT5, 5e, 6 | FEATURES: FLASH Upgradable

*ACU7001A: left: remote unit; right: local unit*

- Place a remote control station up to 304.8 m from local equipment.
- Resolution of 1024 x 768 at 304.8 m; higher resolutions at shorter distances.
- Automatically adjust video quality and fix color drift associated with CAT5e and CAT6 cable.
- ✦✦ WARRANTY — 1 Year

CE Approval — Yes

| Item | | Code |
|---|---|---|
| ServSwitch™ Brand Mini CATx KVM Extenders with Automatic Skew Compensation | | |
| Local CPU to Remote Station Kit | | |
| | PS/2 | ACU7001A |
| | USB | ACU7009A |
| To connect to local and remote units at a 20% savings, order… | | |
| CAT5 Unshielded 100-MHz Bulk Cable, Solid, Beige, PVC, 1000-ft. (304.8 m) Spool *(For other colors or plenum versions, see **website**)* | | EYN840A-1000 |

## ServSwitch Wizard Multimedia KVM Extender

CAT5 extension and KVM switching all in one box!

PLATFORMS: PC | CONNECTORS: PS/2, VGA | CABLE: CAT5 | PERIPHERALS: Spkr./Mic, Serial | SWITCHING: Hotkey

- Supports distances up to 198.1 m between local and remote units over a single CAT5 cable.
- Crystal-clear video, up to 1600 x 1280.
- ✦✦ WARRANTY — 1 Year

CE Approval — Yes
RoHS — Yes

| Item | | Code |
|---|---|---|
| ServSwitch Wizard Multimedia KVM Extender | | ACU1600A |
| For CPU connections not covered by the included cables, order… | | |
| Computer Cables *(For other lengths, see **blackbox.nl**.)* | | |
| | 5-ft. (1.5-m) | EHN408-0005 |
| | 10-ft. (3.0-m) | EHN408-0010 |
| | 30-ft. (9.1-m) | EHN408-0030 |
| To rackmount your Wizard, order… | | |
| Rackmount Kit | | RMK19WX |

## ServSwitch Wizard Extender Kits

These flexible extender kits grow as your operation grows.

PLATFORMS: PC | CONNECTORS: PS/2, VGA | CABLE: CAT5, 5e, 6 | FEATURES: FLASH Upgradable

*ACU5010A*

- Transmit KVM signals up to 200 m over CAT5 cable, CAT5e or CAT6 cable with an external skew compensator, or skew-free CAT5e cable.
- Resolutions up to 1600 x 1280.
- ✦✦ WARRANTY — 1 Year

RoHS — Yes

| Item | | Code |
|---|---|---|
| ServSwitch Wizard™ Single-Access Extender Kits | | |
| Basic | | ACU5010A |
| For dual-video or two-user applications, order… | | |
| ServSwitch Wizard Extender Dual-Video Transmitter | | ACU5013A |
| For two-user applications, you also need a receiver for each connected workstation. | | |
| ServSwitch Wizard Extender Receiver | | ACU5011A |

## ServSwitch DVI CATx KVM Extenders

### Bring versatile KVM extension capabilities to your DVI-D video applications!

| PLATFORMS | CONNECTORS | CABLE | FEATURES |
|---|---|---|---|
| PC, Sun™, Mac® | PS/2, USB, DVI-D | CAT5, 5e, 6 | FLASH Upgradable |

- Transmit keyboard, mouse, and DVI-D video signals up to 140 m over backbone cabling.
- Transmit signals up to 61 m over patch cabling.
- Get resolutions up to 1920 x 1200.
- Models available for PS/2 and USB keyboards and mice.
- Enables dual access for a single user. You can connect a monitor, keyboard, and mouse to the computer and have a KVM console on the remote end. Control your computer at either location!
- Dual DVI models enable you to connect up to two DVI-D monitors to the computer and at the remote KVM console.
- ✦✦ WARRANTY — 2 Years

*ACS4001A-R2: local and remote units*

With the CATx KVM extenders, you can send keyboard, mouse, and DVI-D video signals up to 140 m over CAT5/5e/6 cable.

Choose from six models. The ACS2009A-R2 and ACS4001A-R2 work with a PS/2 or USB keyboard and mouse respectively. Connect a keyboard, mouse, and DVI-D monitor directly to the computer on the transmitting end of the link and a KVM console with a DVI-D monitor on the receiving end. This method of dual access enables you to connect to your computer at either location. The dual DVI versions take it even farther!

The ACS2209A-R2 and ACS4201A-R2 are built for today's computers with dual video heads. Unlike the single DVI models, you can connect up to two DVI-D monitors directly to the computer on the transmitting end of the link and two DVI-D monitors at the receiving KVM console.

You can do more with more monitors connected to your computer. You can put a different application on each monitor to eliminate switching between applications. Or if you have an application that uses lots of small windows, you can expand it across both monitors to provide more work space.

The ACS4002A-R2 and ACS4004A-R2 feature USB HID ports that are compatible with human interface devices (HIDs), including keyboards, mice, trackballs, GlidePoint® touchpads, Wacom® tablets, jog wheels, and some touch screens—anything that installs as an HID.

*NOTE: The USB HID ports don't support small or mass storage devices, optical drives, or any device that requires a driver to be installed. For details, contact our FREE Tech Support.*

## TECH SPECS

**Distance (Maximum) — ACS2009A-R2, ACS2209A-R2, ACS4001A-R2, ACS4201A-R2:**
24 AWG solid: 400 ft. (121.9 m); 24, 26 or 28 AWG patch: 200 ft. (60.9 m);
ACS4002A-R2, ACS4004A-R2: 24 AWG solid: 460 ft. (140 m); 26 or 28 AWG patch: 230 ft. (70 m)

**Operating Environment —**
Temperature: 41 to 113° F (5 to 45° C);
Humidity: Up to 80% noncondensing

**Resolution (Maximum)** — 1920 x 1200 @ 60 Hz

**CE Approval** — Yes

**RoHs** — Yes

**Connectors —**
ACS2009A-R2:
Local unit:
Keyboard and mouse: (1) 6-pin mini DIN F;
Monitor: (2) DVI-D F;
Interconnect: (1) RJ-45;
Remote unit:
Keyboard and mouse: (2) 6-pin mini DIN F;
Monitor: (1) DVI-D F;
Interconnect: (1) RJ-45;
ACS4001A-R2:
Local unit:
Keyboard and mouse: (1) USB Type B F;
Monitor: (2) DVI-D F;
Interconnect: (1) RJ-45;
Remote unit:
Keyboard and mouse: (2) USB Type A F;
Monitor: (1) DVI-D F;
Interconnect: (1) RJ-45;
ACS4002A-R2:
Local unit:
Keyboard and mouse: (2) USB Type A F;
Monitor: (2) DVI-D F;
Interconnect: (2) RJ-45;
Remote unit:
Keyboard and mouse: (4) USB Type A F (USB 2.0);
Monitor: (1) DVI-D F;
Interconnect: (2) RJ-45;
ACS4004A-R2:
Local unit:
Keyboard and mouse: (1) USB Type B F;
Monitor: (2) DVI-D F;
Interconnect: (1) RJ-45;
Remote unit:
Keyboard and mouse: (4) USB Type A F (USB 2.0);
Monitor: (1) DVI-D F;
Interconnect: (1) RJ-45;
ACS2209A-R2:
Local unit:
Keyboard and mouse: (1) 6-pin mini DIN F;
Monitor: (4) DVI-D F;
Interconnect: (2) RJ-45;
Remote unit:
Keyboard and mouse: (2) 6-pin mini DIN F;
Monitor: (2) DVI-D F;
Interconnect: (2) RJ-45;
ACS4201A-R2:
Local unit:
Keyboard and mouse: (1) USB Type B F;
Monitor: (4) DVI-D F;
Interconnect: (2) RJ-45;
Remote unit:
Keyboard and mouse: (2) USB Type A F;
Monitor: (2) DVI-D F;
Interconnect: (2) RJ-45

**Power** — 90–240 VAC, 47–63 Hz, autosensing, external, with IEC 320 connector and cord

**Size** — Single DVI local and remote units:
1.1"H x 4"W x 5.6"D (2.8 x 10.2 x 14.2 cm) each;
Dual DVI local and remote units:
1.6"H x 4"W x 5.6"D (4.1 x 10.2 x 14.2 cm) each

**Weight —**
Local and remote units: 1.3 lb. (0.6 kg) each

| Item | Code |
|---|---|
| ServSwitch™ DVI CATx KVM Extenders | |
| Single DVI | |
| PS/2 | ACS2009A-R2 |
| USB | ACS4001A-R2 |
| Single DVI-D | |
| with 4 USB Ports and 2 USB HID Ports | ACS4002A-R2 |
| with 4 USB HID Ports | ACS4004A-R2 |
| Dual DVI | |
| PS/2 | ACS2209A-R2 |
| USB | ACS4201A-R2 |

**To connect local and remote units at a 20% savings, order…**

| | |
|---|---|
| GigaTrue® 550 CAT6, 550-MHz Stranded Bulk Cable (UTP), 4-Pair, Beige, PVC, 500-ft. (152.4-m) *(For other lengths or colors, see **website**.)* | EVNSL645A-0500 |

## ServSwitch Wizard USB KVM Extender with Audio

PLATFORMS: PC, Sun™, Mac® | CONNECTORS: USB, VGA | CABLE: CAT5, 5e, 6 | PERIPHERALS: Spkr./Mic, USB | FEATURES: FLASH Upgradable

### Put distance between your CPU and your USB peripherals in standalone or high-density applications.

*ACU5050A*

- Extends transmissions up to 120 m over CATx between USB peripheral devices and the CPU, including audio.
- Supports resolutions up to 1600 x 1200.
- Ideal for high-density applications where you want to use USB keyboards, mice, and other devices, but the server is not close by.
- Extender package includes a local and a remote unit; the remote unit features a 4-port USB hub.
- Rackmount up to 16 extenders at a time with the optional ServSwitch Wizard Extender Chassis (ACU5000A).
- ✦✦ WARRANTY — 1 Year

*ACU5000A*

**TECH SPECS**

**Resolution (Maximum)** — 1600 x 1200 @ 60 Hz
**CE Approval** — Yes
**RoHS** — Yes
**Connectors** — Local unit: Audio: (2) 3.5-mm jacks; Video: (1) HD15 F; USB: (1) USB Type B; Interconnect: (2) RJ-45;
Remote unit: Audio: (2) 3.5-mm jacks; Video: (1) HD15 F; USB: (4) USB Type A; Interconnect: (2) RJ-45
**Size** — 1"H x 2.9"W x 6.4"D (2.5 x 7.4 x 16.3 cm)
**Weight** — Local and remote units: 1 lb. (0.5 kg)

| Item | Code |
|---|---|
| ServSwitch Wizard USB KVM Extender with Audio | ACU5050A |
| **Rackmount multiple local and remote units...** | |
| ServSwitch Wizard Extender Chassis | ACU5000A |
| **To power up to four ServSwitch Wizard Extenders, order...** | |
| Rackmountable Power Distribution Module | PS5000-R2 |

## ServSwitch DVI/VGA CATx Extender

PLATFORMS: PC | CONNECTORS: PS/2, DVI-I | CABLE: CAT5, 5e, 6 | FEATURES: FLASH Upgradable

### Extend analog VGA and digital DVI video signals over CAT5, CAT5e, or CAT6 UTP cable.

- Perfect image quality even at the maximum distance of 100 m.
- Resolutions up to 1600 x 1200.
- Combine VGA and DVI video in your extension applications!
- Flexible architecture is ready for future changes.
- On-screen display enables easy video adjustments.
- ✦✦ WARRANTY — 1 Year

With flat-panel displays so popular, you need the Black Box® ServSwitch™ DVI/VGA CATx Extender. It supports DVI extension with resolutions up to 1600 x 1200 at distances up to 100 m.

If you use VGA equipment today but plan to upgrade to DVI in the near future, this extender is ready for the changeover. The DVI/VGA CATx Extender also includes flash ROM memory, so you can download the latest software enhancements from our FTP site!

This extender enables you to lock your server up in a safe, secure room and access it from your remote workstation. With its on-screen display, the extender makes adjusting your video simple.

The DVI/VGA CATx Extender is perfect for KVM extension applications that demand exceptional image quality. It's also ideal for air traffic control systems, passenger information systems, and co-locating users' computers in a call center.

For DVI/VGA combinations over fiber, check out our DVI/VGA Fiber Extenders on **pages 69 and 71**.

### What's included

- Local unit
- Remote unit
- (2) power supplies and cords
- (2) DVI-I male to VGA HD15 female adapter cables
- DVI-I female to VGA HD15 male adapter cable
- 3-in-1 PS/2 DVI cable to CPU

**CE Approval** — Yes
**RoHS** — Yes

| Item | Code |
|---|---|
| ServSwitch DVI/VGA CATx Extender | ACS253A-CT |
| **You may also need...** | |
| 19" Rackmount Kit | RMK253A |
| **To connect the local and remote units at a 20% savings, order...** | |
| CAT5 Solid-Conductor Cable, 100-MHz, 24 AWG, 4-Pair, Straight-Pinned, 568B, PVC, Custom Lengths *(For specific lengths or plenum cable, see **www.blackbox.nl**.)* | EYN840-XXXX |

## Low-Cost ServSwitch Wizard Extender Kits

### Use a PS/2 keyboard and mouse at your remote console to connect to a PS/2 or USB computer up to 100 m away.

PLATFORMS: PC, Sun™, Mac® | CONNECTORS: PS/2, USB, VGA | CABLE: CAT5, 5e, 6 | FEATURES: FLASH Upgradable

- Extend KVM over CATx up to 100 m for PS/2 or USB computers.
- Provide 1600 x 1200 resolution at up to 100 m.
- Provide 1900 x 1440 resolution at up to 50 m.
- Compatible with a wide range of operating systems: Windows®, DOS, Linux®, UNIX®, BSD, Sun™ OS, Solaris™, Mac®, NetWare®, and more!
- Fully support DDC for automatic video setup plus USB emulation and built-in skew compensation.
- Ensure bright and clear images with their own brightness correction.
- Work with flat-screen and CRT-style monitors.
- ✦✦ WARRANTY — 1 Year

*ACU5001A: top: local module; bottom: remote module*

### What's included

- User station
- PS/2 or USB SAM (Server Access Module)
- Power supply
- Power cord
- Rackmount mounting plate
- Set of (4) rubber feet

### TECH SPECS

**Resolution (Maximum)** — 1600 x 1200 up to 328 ft. (100 m); 1900 x 1440 up to 164 ft. (50 m)
**Connectors** — ACU5001A:
Local module: Interconnect: (1) RJ-45; Keyboard and mouse: (2) 6-pin mini DIN M; Video: (1) HD15 M;
Remote module: Interconnect: (1) RJ-45; Keyboard and mouse: (2) 6-pin mini DIN F; Video: (1) HD15 F;
Power: (1) 2.5-mm jack;
ACU5002A:
Local module: Interconnect: (1) RJ-45; Keyboard and mouse: (1) USB Type A M; Video: (1) HD15 M;
Remote module: Interconnect: (1) RJ-45; Keyboard and mouse: (2) 6-pin mini DIN F; Video: (1) HD15 F;
Power: (1) 2.5-mm jack
**CE Approval** — Yes
**RoHS** — Yes
**Power** — 100–240 VAC, 50–60 Hz, autosensing, external

| Item | Code |
|---|---|
| Low-Cost ServSwitch Wizard™ Extender Kits | |
| PS/2 | ACU5001A |
| USB | ACU5002A |

## ServSwitch Brand Mini CATx KVM Extenders with Automatic Equalization

### With flash upgradability and VESA DDC, good things *do* come in small packages!

PLATFORMS: PC, Sun™, Mac® | CONNECTORS: PS/2, USB, VGA | CABLE: CAT5, 5e, 6 | FEATURES: FLASH Upgradable

- Ideal for space-limited applications! Use CAT5, CAT5e, or CAT6 UTP to place a remote control station up to 91.4 m from local equipment.
- Maximum resolutions of 1600 x 1280 at 60.9 m and 1280 x 1024 at 91.4 m.
- Adjust video equalization and gain for cable length automatically.
- VESA enhanced DDC enables plug-and-play capability.
- Small size saves valuable desktop space.
- ✦✦ WARRANTY — 1 Year

*ACU7017A: left: remote unit; front view right: local unit; front view*

*ACU7017A: left: remote unit; rear view right: local unit; rear view*

Connect a remote control station up to 91.4 m away from a local CPU with the ServSwitch Brand Mini CATx KVM Extenders with Automatic Equalization. LED indicators on each unit show link status and data flow.

The extenders work independently of your operating system and emulate remote keyboard and mouse signals. If the remote keyboard and mouse aren't connected, the local CPU can still boot as long as it's connected to the local extender unit.

The extenders are also Display Data Channel (DDC) compatible, and you can configure the extenders to acquire a remote monitor's DDC parameters and send them to the local CPU.

### TECH SPECS

**Compatibility** — Keyboard: PC/AT®, PS/2; Mouse: PS/2 two-button, Microsoft® IntelliMouse®, Logitech™ three-button
**Distance (Maximum)** — 300 ft. (91.4 m)
**CE Approval** — Yes
**Power** — Local units: From the connected PC; Remote units: Wallmount: Input: 100–240 VAC, 50–60 Hz, 0.35A; Output: 5 VDC, 2.6A
**Size** — Local units: 0.6"H x 1.4"W x 2.4"D (1.5 x 3.6 x 6.1 cm);
Remote units: 0.8"H x 2.2"W x 2.5"D (2 x 5.6 x 6.4 cm)

« Mini CATx KVM Extenders with Automatic Skew Compensation, p. 58.

### What's included

- Local unit
- Remote unit
- Power supply
- Power cord

**ACU7017A** also includes:

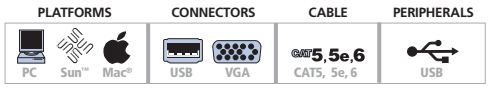
- PS/2 Y cable

| Item | Code |
|---|---|
| ServSwitch Brand Mini CATx KVM Extenders with Automatic Equalization | |
| PS/2 | ACU7017A |
| USB | ACU7025A |

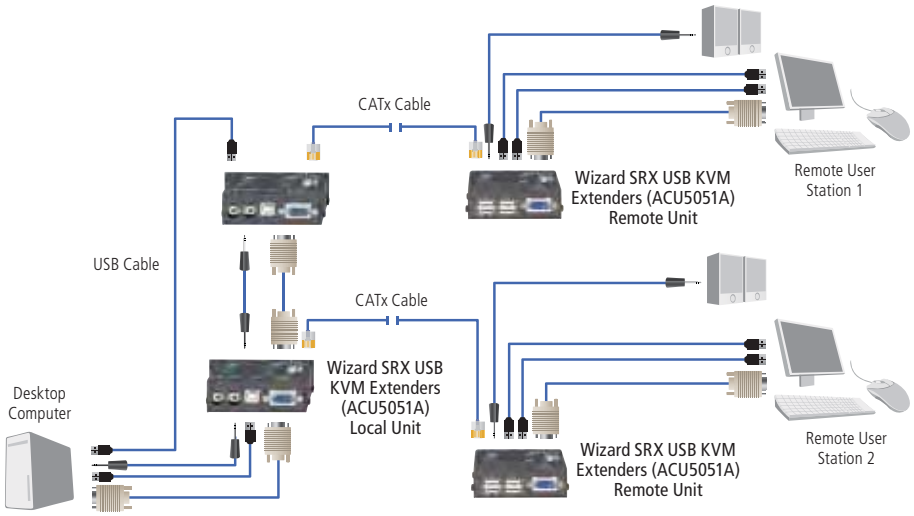
To connect to local and remote units at a 20% savings, order…
CAT5 Unshielded 100-MHz Bulk Cable, Solid, Beige, PVC, 1000-ft. (304.8-m) Spool
(For other colors or plenum versions, see ***web***)
EYN840A-1000

## ServSwitch Wizard SRX USB KVM Extenders

Extend high-resolution VGA with USB 1.1 and stereo audio more than 50 meter over CATx cable.



- Transparent USB 1.1 and USB 2.0 support up to 50 m over a single CATx cable.
- Support resolutions up to 1920 x 1440 at 60 Hz.
- Extend video, audio, USB keyboard and mouse signals, and up to two USB peripherals.
- DDC EDID reads from the local display, eliminating plug-and-play issues.
- Local VGA and stereo audio feedthrough.
- Dual-video model also works with RS-232.
- Rack up to 16 units with the Rackmount Chassis for ServSwitch KVM Extender (ACU5000A).
- ✦✦ WARRANTY — 2 Years


CATx Cable
Wizard SRX USB KVM Extenders (ACU5051A) Remote Unit
Remote User Station 1
USB Cable
CATx Cable
Wizard SRX USB KVM Extenders (ACU5051A) Local Unit
Desktop Computer
Wizard SRX USB KVM Extenders (ACU5051A) Remote Unit
Remote User Station 2

### The power of transparent USB

ServSwitch Wizard™ SRX USB KVM Extenders from Black Box combine VGA, USB 1.1 or USB 2.0, and audio, and send them up to 50 m across a single CATx cable. It's easy to fine-tune the video image on the remote unit and get crystal-clear stereo audio and transparent USB.

### DDC EDID read and store support

Modern graphics adapter cards—even with analog output—require the presence of Display Data Channel (DDC) information. Without it, they output low-quality video or none at all. ServSwitch Wizard SRX USB Extenders read the DDC information from the attached local display and store it in the local unit's non-volatile memory.

### Small form factor

The ServSwitch Wizard SRX USB KVM Extender's compact chassis enables you to mount it side by side in the Rackmount Chassis for ServSwitch KVM Extender (ACU5000A). Use it to mount up to 16 single-video units or eight dual-video versions in just 2U.

### Support for RS-232

The dual-video version of the SRX series (ACU5052A) uses two CATx links to transmit the signals. The second video link carries a transparent RS-232 port up to 19.2 kbps.

### Local access

All local units have audio and VGA feed-through, giving you local access just by plugging a keyboard and mouse directly into the spare PC USB ports.

### Dual-user configuration

With two single-video units, you can connect two workstations with keyboards, monitors, and mice to one CPU tower. Two users can use the local connections to monitor and diagnose the CPU. This setup is ideal for a remote CPU that doesn't need to be monitored simultaneously by two users.

### What's included

- Local unit
- Remote unit
- Power supply
- IEC 320 power cord
- VGA cable, ACU5052A (2)
- USB cable A-B
- Audio cable
- DB9 serial cable (ACU5052A only)
- User's manual on CD
- Mounting plate for local or remote unit

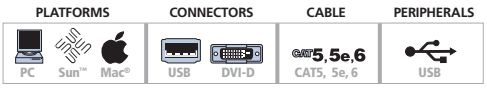
### TECH SPECS

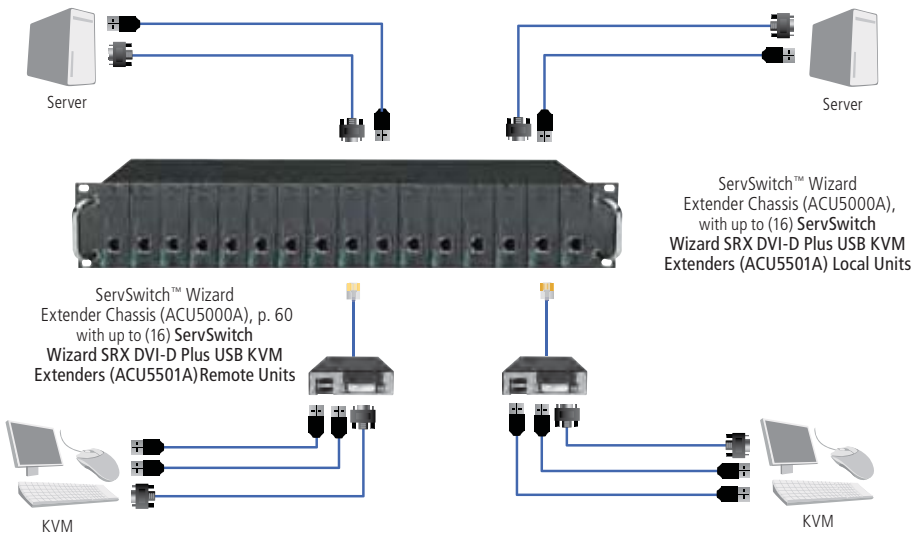
**CE Approval** — Yes
**RoHS** — Yes
**Connectors** —
ACU5051A: Local Unit: (1) RJ-45; (1) USB Type B F; (2) HD15 F for VGA; (2) 3.5-mm audio jack F; (1) barrel jack for power;
**Remote Unit:** (1) RJ-45; (4) USB Type A; (1) HD15 F for VGA; (1) 3.5-mm audio jack F; (1) barrel jack for power;
ACU5052A: Local Unit: (2) RJ-45; (1) USB Type B; (4) HD15; (2) 3.5-mm audio jacks F; (1) DB9 F; (1) barrel jack;
Remote Unit: (2) RJ-45 F; (4) USB Type A F (2) HD15 F for VGA; (1) 3.5-mm audio jack F; (1) DB9 M; (1) barrel jack for power
**Power** — Autosensing 100–240 VAC/ 5 VDC 2.5 A (PS649-R3)
**Size** — ACU5051A: 1"H x 2.9"W x 4.9"D (2.6 x 7.5 x 12.5 cm);
ACU5052A: 2"H x 2.9"W x 4.9"D (5.2 x 7.5 x 12.5 cm)
**Weight** — 1.1 lb. (0.5 kg)

| Item | Code |
|---|---|
| ServSwitch Wizard SRX USB KVM Extenders | |
| Single-Video, USB and Audio | ACU5051A |
| Dual-Video, USB, Audio, and RS-232 | ACU5052A |
| **You might also need...** | |
| Rackmount Chassis for ServSwitch KVM Extender For up to 16 Units | ACU5000A |
| 5-VDC Power Supply | PS649-R3 |

# ServSwitch Wizard SRX DVI-D Plus USB KVM Extender

## Get single-link DVI-D extension with a USB keyboard and mouse over a single CAT6 cable.





Server
Server
ServSwitch™ Wizard Extender Chassis (ACU5000A), with up to (16) ServSwitch Wizard SRX DVI-D Plus USB KVM Extenders (ACU5501A) Local Units
ServSwitch™ Wizard Extender Chassis (ACU5000A), p. 60 with up to (16) ServSwitch Wizard SRX DVI-D Plus USB KVM Extenders (ACU5501A)Remote Units
KVM
KVM

- Extend DVI-D KVM up to 30 m at 1920 x 1200 or 50 m at 1280 x 1024 using only one CAT6 or higher cable.
- No compression or delay of video data.
- Supports USB keyboards and mice.
- Two-page EDID read-and-store, plug-and-play setup.
- ✦✦WARRANTY — 2 Years

### What's included

- Local unit
- Remote unit
- USB and DVI-D cables
- Power supply
- Power cord (IEC-320)
- User's manual on CD
- Mounting plate for local or remote unit

### When less is more

More room and flexibility, less clutter—the Black Box® ServSwitch Wizard™ SRX DVI-D Plus USB KVM Extender uses only a single CATx cable to extend keyboard, mouse, and uncompressed single-link DVI-D video up to 30 m at full 1920 x 1200 resolution!

### USB keyboard and mouse support

The Wizard SRX DVI-D supports a variety of USB keyboards and mice as well as other Human Interface Devices (HIDs) such as touch screens.

### DDC read and store

The Wizard SRX DVI reads the EDID from the attached screen via the DDC channel and stores it in the local unit's memory to mirror the remote screen, so the graphics card can function properly.

### 19" mounting

Because of its small form factor, you can mount up to 16 local or remote units in the Rackmount Chassis for ServSwitch Wizard Extender (ACU5000A).

### Interface-powered local unit

The local unit of the Wizard SRX can be interface powered if your attached PC outputs do not exceed 500 mA. Otherwise, use the spare 5-VDC Power Supply (PS649-R3).

### TECH SPECS

**Resolution (Maximum)** —1920 x 1200 @ 60 Hz
**CE Approval** — Yes
**RoHS** — Yes
**Connectors** —
Local unit: (1) USB Type B F; (1) DVI-D F;
Interconnect: (1) RJ-45;
Power: From the interface or via optional PS649-R3;
Remote Unit: (2) USB Type A F; (1) DVI-I D F;
Interconnect: (1) RJ-45;
Power: 90–240 VAC, 47–63 Hz, autosensing, external, with IEC 320 connector and cord
**Size** — 1"H x 2.9"W x 4.9"D (2.6 x 7.5 x 12.5 cm)

| Item | Code |
|---|---|
| ServSwitch Wizard SRX DVI-D Plus USB KVM Extender | ACU5501A |
| You might also need… | |
| Rackmount Chassis for ServSwitch KVM Extender For up to 16 Local or Remote Units | ACU5000A |
| 5-VDC Power Supply | PS649-R3 |

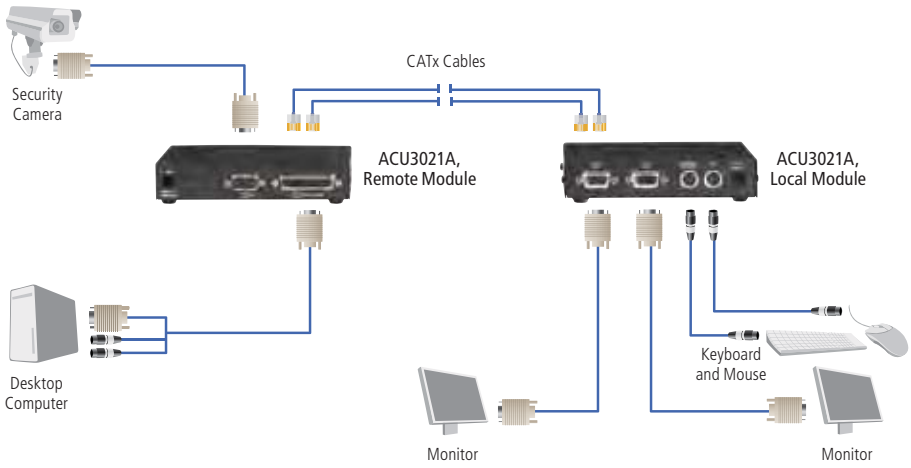
## ServSwitch Brand Micro Extender Kits

Transmit single and dual video—plus serial and audio—up to 45 meter away!

PLATFORMS: PC, Sun™, Mac® | CONNECTORS: PS/2, USB, VGA | CABLE: CAT5, 5e, 6 | PERIPHERALS: Spkr./Mic, USB, Serial, Touch Screen | FEATURES: FLASH Upgradable

*ACU3201A: remote and local unit; front and rear view*

- Transmit VGA as well as keyboard and mouse signals up to 45.7 m over CAT5, CAT5e, and CAT6 UTP cable.
- Support up to 1600 x 1200 resolution.
- Choose from models for PS/2 or USB keyboard and mouse consoles.
- Dual-VGA units support two monitors.
- Serial and audio models enable you to connect devices such as touch screens and hear audible alarms.
- Standalone remote units work with our CAT5 KVM Extender Hubs.
- ✦✦WARRANTY — 1 Year




### Two kinds of consoles: PS/2 or USB.

Our ServSwitch Brand Micro Extender Kits enable you to place your workstation up to 45.7 m away from a server with either a PS/2 or USB keyboard and mouse console. The extenders transparently send VGA and USB 1.1 signals over CAT5/5e/6 cable. And with up to 1600 x 1200 resolution, you get sharp, clear video, even on large monitors.

A 4-port USB hub built into the USB remote units enables you to connect USB 1.1 devices such as memory sticks and PDAs in addition to the keyboard and mouse.

### Twice the access.

Dual-access models enable two workstations—one local and one remote—to access a server. You can have a local workstation in your server room and another in your office or other remote location.

### Send serial and audio, too!

Two kits (ACU3222A, ACU3228A) support serial RS-232 signals as well as audio on the same CAT5/5e/6 cable. Use them to connect serial touch screens and printers. Audio extension provides bidirectional stereo transmission so you can hear audible alarms at your workstation.

### All purpose.

All models are flash upgradable and provide local passthrough for video signals so you can connect a local VGA monitor for administration.

### TECH SPECS

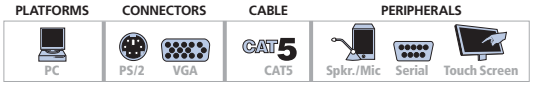
**Connectors —**
All PS/2 local units: (1) DB25 F, (1) HD15 M, (1) 2.5-mm barrel power jack, (2) RJ-45;
ACU3209A, ACU3228A also include: (2) HD15 F, (2) 6-pin mini DIN F;
ACU3222A, ACU3228A also include: (2) 3.5-mm audio jacks, (1) DB9 F;
All PS/2 remote units: (2) DB15 F, (2) 6-pin mini DIN F, (1) 2.5-mm barrel power jack, (2) RJ-45;
ACU3222A, ACU3228A also include: (2) 3.5-mm audio jacks, (1) DB9 M;
All USB local units: (1) HD15 F, (1) HD15 M, (1) USB Type B F, (1) barrel power jack, (1) RJ-45;
ACU4201A, ACU4222A also include: (1) HD15 F, (1) HD15 M, (1) RJ-45;
ACU4222A also has: (2) 3.5-mm audio jacks, (1) DB9 F;
USB remote units, ACU4xxxA: (1) DB15 F, (4) USB Type A F, (1) barrel power jack, (1) RJ-45;
ACU4201A, ACU4222A also include: (1) HD15 F, (1) RJ-45;
ACU4222A also has: (2) 3.5-mm audio jacks, (1) DB9 M

**CE Approval — Yes**
**RoHS — Yes**
**Power —** PS/2 local units: Via PS/2 interface or optional external 9-VDC power supply (PSU1002E-R3; for details, call our FREE Tech Support);
PS/2 remote units: Included external power supply, 100–240 VAC, 50–60 Hz;
USB local units: Via USB interface or optional external 5-VDC power supply (PSU1006E-R2; call our FREE Tech Support);
USB remote units: Included external power supply, 100–240 VAC, 50–60 Hz

| Item | Code |
|---|---|
| **For PS/2 applications, order…** | |
| ServSwitch™ Brand Micro Extender Kits | |
| Dual-VGA | ACU3201A |
| with Serial and Audio | ACU3222A |
| ✦ Include (1) local unit, (1) remote unit, (1) 9 VDC 1-amp power supply transformer and output cord, (1) power supply input cord, (1) 3-ft. HD15 to HD video cable, and (1) 3-ft. Micro Extender Cable (EHN230-0003). | |
| **For two-user PS/2 applications, order…** | |
| Dual-Access ServSwitch Brand Micro Extender Kits | |
| Dual-VGA | ACU3209A |
| with Serial and Audio | ACU3228A |
| ✦ Include (1) local unit, (1) remote unit, (1) 9 VDC 1-amp power supply transformer and output cord, (1) power supply input cord, (1) 3-ft. HD15 to HD video cable, and (1) 3-ft. Micro Extender Cable (EHN230-0003). | |
| **For USB applications, order…** | |
| ServSwitch Brand USB Micro Extender Kits | |
| Single-VGA | ACU4001A |
| Dual-VGA | ACU4201A |
| with Serial and Audio | ACU4222A |
| ✦ Include (1) 5-VDC power supply and (1) 3.3-ft. USB/Video Cable with USB connector and VGA video (HD15 M-F) | |
| **To rackmount up to three local or remote units, order…** | |
| Rackmount Kit for CATx Extenders, 19" Rack | RMK19U-X3 |

# ServSwitch Brand CAT5 KVM Micro Extender Kits

## A compact, low-cost way to extend KVM signals up to 45 meter!

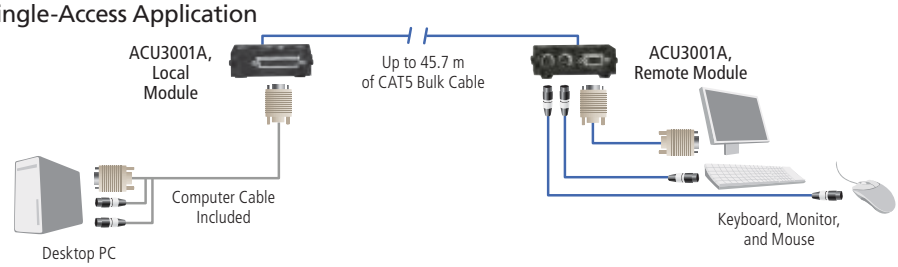



- Put some distance— 45.7 m — between your CPU or ServSwitch and your keyboard, monitor, and mouse.
- Adjustable video equalization and 1280 x 1024 resolution for crisp, clear video.
- Use ordinary CAT5 cable, which you may already have installed.
- Transmit high-resolution video even up to the maximum distance.
- Intelligent keyboard and PS/2 emulation prevents remote CPU lockup—even if your keyboard or interconnect cable is disconnected.
- Built-in surge protection protects the CAT5 link side from surges and spikes.
- Enable you to place CPUs where you want them.
- The ACU3009A enables you to place a keyboard, monitor, and mouse both near your CPU and at a remote location up to 45.7 m away!
- The ACU3022A provides additional serial and audio support!
- To use Extender Kits with an AT® mouse, add a GHOST Emulator (AC244A), page 80.
- ✦✦ **WARRANTY** — 1 Year

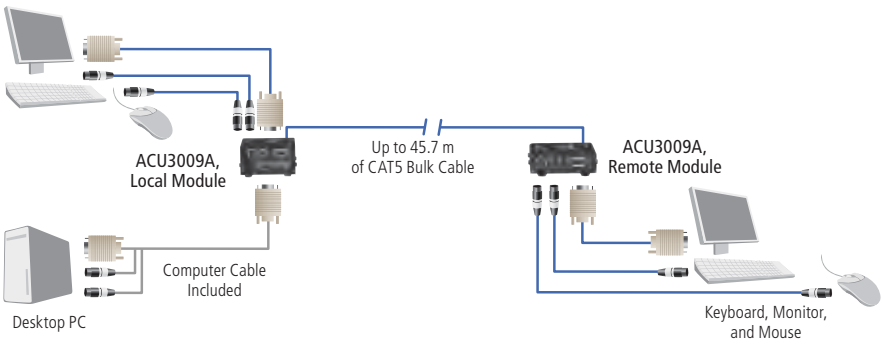
**Built-in surge protection!**

*ACU3009A* *ACU3001A*

### Single-Access Application




### Dual-Access Application




### What's included

- Local unit
- Remote unit
- (1) 3-ft. coax CPU cable
- Power supply (PSU1002E-R3)

ACU3022A also includes:

- (1) 3-ft. serial cable
- (1) 6-ft. audio cable

### TECH SPECS

**Resolution (Maximum)** — 1280 x 1024 @ 150 ft. (45.7 m)
**Clamping Voltage** — 15 volts
**Compatibility** — Keyboard: PC/AT, PS/2;
Video: VGA, Super VGA, XGA;
Mouse: PS/2 mouse only
**Connectors** — Local modules:
CPU: (1) DB25 F;
Interconnect: (1) RJ-45;
ACU3009A also has: Monitor: (1) HD15 F;
Keyboard and mouse: (2) 6-pin mini DIN F;
ACU3022A also has: Audio: (2) 3.5-mm F;
Serial: (1) DB9 F;
Remote modules:
Interconnect: (1) RJ-45;
Monitor: (1) HD15 F;
Keyboard and mouse: (2) 6-pin mini DIN F;
Power: (1) barrel connector M;
ACU3022A also has: Audio: (2) 3.5-mm F;
Serial: (1) DB9 F
**CE Approval** — Yes
**RoHS** — Yes
**Power** — Local module: From the CPU;
Remote module: 100–240 VAC, 50–60 Hz, autosensing, external, with IEC 320 connector and power cord
**Size** — ACU3001A local and remote modules, ACU3009A remote module: 1"H x 4.3"W x 3.1"D (2.5 x 10.9 x 7.9 cm);
ACU3009A local module: 1.7"H x 4.3"W x 3.1"D (4.3 x 10.9 x 7.9 cm);
ACU3022A local and remote modules: 2"H x 3.2"W x 4.3"D (5.1 x 8.1 x 10.9 cm)

| Item | Code |
|---|---|
| **For single-access applications, order...** | |
| ServSwitch Brand CAT5 KVM Micro Extender Kit | ACU3001A |
| **For dual-access applications, order...** | |
| ServSwitch Brand Dual-Access CAT5 KVM Micro Extender Kit | ACU3009A |
| **For bidirectional serial and audio support, order...** | |
| ServSwitch Brand CAT5 KVM Micro Extender Kit with Bidirectional Serial and Audio Support | ACU3022A |
| **For longer distances between your CPU and local module, order...** | |
| Coax CPU Cables for CAT5 KVM Extenders | |
| 10-ft. (3.0-m) | EHN230D-0010 |
| 15-ft. (4.5-m) | EHN230-0015 |

## Black Box Explains

### Using fiber optics for KVM extension.

If you're sending KVM signals between buildings for an extended distance, in areas supplied by different power sources, in an electrically noisy environment, or where data security is a big concern, you need to use a fiber optic-based KVM extender.

Optical fiber is an ideal transmission medium not only for backbone and horizontal connection, but also for workstation-to-backracked CPU or server links. It works very well in applications where you need to transfer large, bandwidth-consuming data files over long distances, and where you require immunity from electrical interference or data theft.

### The choice for extraordinary reach.

Fiber doesn't have the 100-meter distance limitation that UTP copper without a booster does. Fiber distances can range from 300 meters to 70 kilometers, depending on the cable, wavelength, and network. With fiber-based KVM extenders, the transmitter converts conventional data signals into a modulated light beam, then transports the beam via the fiber to a receiver, which converts the light back into electrical signals.

Many newer fiber-based KVM extenders support both analog and digital transmission. Often, they work by digitizing video output from a local CPU, then sending it across fiber link to a remote unit, which converts it back to the original analog signal. In many cases, one fiber of the fiber pair transmits monitor video serially and the second fiber wsends remote mouse and keyboard information back to the local CPU.

### The choice for ensuring signal integrity.

Because fiber is made of glass, which is an insulator, no electric current can flow through. It's immune to electromagnetic interference and radio-frequency interference (EMI/RFI), crosstalk, impedance problems, and more.

This is why fiber-based KVM extenders are beneficial to users in process control, engineering, utility, and factory automation applications. The users need to keep critical information safe and secure off the factory floor but be able to access that data from workstations and control consoles within the harsh environments. Plus, fiber is also less susceptible to temperature fluctuations than copper is, and it can be submerged in water.

### The choice for greater signal fidelity.

Fiber-based KVM extenders can carry more information with greater fidelity than copper-based ones can. For this reason, they're ideal for high-data-rate systems in which multimedia workstations are used.

Newer KVM extenders enable you to send both DVI and keyboard and mouse signals over the same fiber cable, transmitting video digitally for zero signal loss. This way, you can get HD-quality resolution even at very long distances from the source. Users in university or government R&D, broadcasting, healthcare—basically anyone who depends on detailed image rendering—can benefit from this technology.

### The choice for data security.

Plus, your data is safe when using fiber to connect a workstation with a CPU or server under lock and key. It doesn't radiate signals and is extremely difficult to tap. If the cable is tapped, it's very easy to monitor because the cable leaks light, causing the entire system to fail. If an attempt is made to break the physical security of your fiber system, you'll know it.

Many IT managers in military, government, finance, and healthcare choose fiber-based KVM extenders for this very reason. Plus corporations, aware of rising data privacy concerns over customer billing information and the need to protect intellectual property, use this type of extension technology in their offices, too.

### Considerations for fiber-based KVM extension.

Before selecting a fiber-based KVM extender, it's important to know the limitations of your system. You need to know where couplers, links, interconnect equipment, and other devices are going to be placed. If it's a longer run, you have to determine whether multimode or single-mode fiber cable is needed.

The most important consideration in planning cabling for fiber-based KVM extension is the power budget specification of device connection. The receiver at the remote end has to receive the light signal at a certain level. This value, called the loss budget, tells you the amount of loss in decibels (dB) that can be present in the link between the two devices before the units fail to perform properly.

Specifically, this value takes the fiber type (multimode or single-mode) and wavelength you intend to use—and the amount of expected in-line attenuation—into consideration. This is the decrease of signal strength as it travels through the fiber cable. In the budget loss calculation, you also have to account for splices, patch panels, and connectors, where additional dBs may lost in the entire end-to-end fiber extension. If the measured loss is less than the number calculated by your loss budget, your installation is good.

Testers are available to determine if the fiber cabling supports your intended application. You can measure how much light is going to the other end of the cable. Generally, these testers give you the results in dB lost, which you then compare to the loss budget to determine your link loss margin.

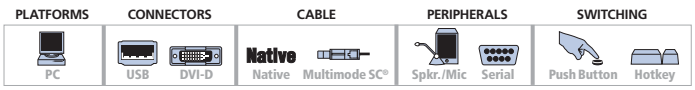
Also, in some instances, particularly when using single-mode fiber to drive the signal farther, the signal may be too strong between connected devices. This causes the light signal to reflect back down the fiber cable, which can corrupt data, result in a faulty transmission, and even damage equipment. To prevent this, use fiber attenuators. They're used with single-mode fiber optic devices and cable to filter the strength of the fiber optic signal from the transmitter's LED output so it doesn't overwhelm the receiver. Depending on the type of attenuator attached to the devices at each end of the link, you can diminish the strength of the light signal a variable amount by a certain number of decibels.

Need help calculating your budget loss? Call our FREE Tech Support. If necessary, they can even recommend a fusion splicing fiber kit, a fiber tester, or a signal attenuator for your specific requirements.

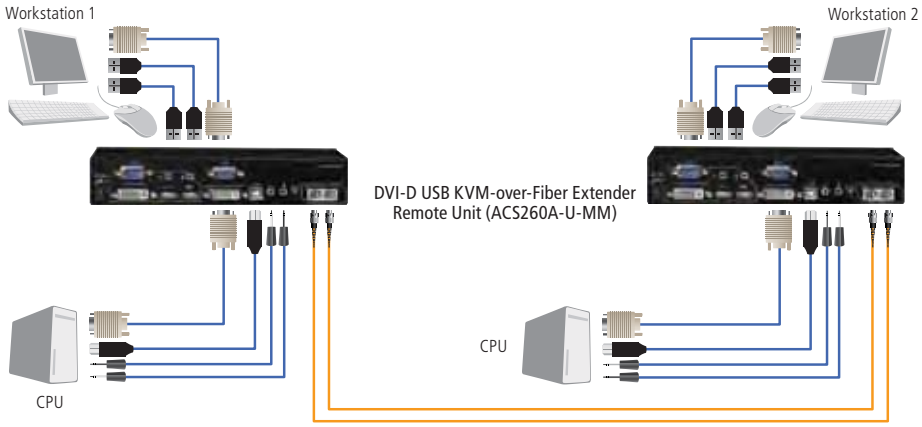
ServSwitch Fiber KVM Extenders, pp. 67-71.

# ServSwitch DVI-D USB KVM-over-Fiber Extender

## Extend DVI 1080p up to 1000 meters and 1080i as far as 2000 meters.



- Extends DVI-D video from a computer or KVM switch to a remote USB keyboard/mouse workstation with a DVI monitor.
- Supports full HD resolutions up to 1920 x 1080 for connecting a 1080p display.
- Pure digital extension over fiber optic cable—zero compression technology.
- Supports EDID, stereo audio, and serial port control.
- Separate your computer from your user station but still enjoy perfect DVI-D monitor video quality.
- ✦✦WARRANTY — 1 Year




Use interference-free, ultra-secure 50/125-µm optical fiber to put a KVM console with a DVI-D monitor up to 2000 meters away from a backracked CPU—without any video compression.

The ServSwitch™ DVI-D USB KVM-over-Fiber Extender from Black Box sends both DVI-D and USB keyboard and mouse signals over the same fiber cable, transmitting digital video for zero signal loss.

The KVM extender optimizes digital display connections for full HD display resolution (1920 x 1080), so you can extend 1080p to a workstation up 1000 meters away. For 1080i video, it extends DVI-D video farther—up to 2000 meters (6561.6 ft.). It can also be used to extend HDTV content for high-end LCDs and computer monitors supporting widescreen WUXGA (1920 x 1200) and UXGA (1600 x 1200) displays.

### The perfect solution for extending serial data reliably and securely

High EMI/RFI resistance makes the extender great for connecting control room monitors, keyboards, and mice to factory floor CPUs or anywhere electronic noise may interfere with communications.

Because the extender uses fiber for extending computer signals, it's ideal for high-security applications. Fiber connection is immune to electromagnetic interference. Use the KVM extender to transmit sensitive data and real-time, high-resolution monitor video in any mission-critical medical, military, and government imaging application. And, as with all Black Box KVM extension solutions, it enables you to keep your computers and valuable data in a locked, secure room and manage them remotely.

### Includes both local and remote extender units

Both the console unit and the computer unit have connections for USB keyboards and mice, as well as DVI-D inputs/ouputs for monitor connections. Plus, the KVM extender supports dual-user access. Connect a USB keyboard/mouse workstation with a DVI-D display at either end of the fiber optic link. It's just like having a built-in two port KVM switch.

### Integrates easily into a KVM switch application.

To switch between and control multiple computer CPUs, connect either extender unit to a KVM switch. The extender supports hotkey controls to select a computer, activate a computer scan, and more.

When the extender is connected to a KVM switch, you can also gain access to the built-in hotkey commands of the attached switch. A "mask hotkey" switch on the extender units masks the master-level KVM extender, so you can configure the slave-level KVM switch as if you're sitting directly in front of the switch itself, saving time and reducing errors.

**CE Approval** — Yes
**RoHS** — Yes

| Item | Code |
|---|---|
| ServSwitch DVI-D USB KVM-over-Fiber Extender | ACS260A-U-MM |
| ✦ Includes (1) DVI-D USB KVM extender local unit, (1) DVI-D USB KVM extender remote unit, (1) 96-ft. (30-m) fiber optic cable, (2) sets of DVI 2-to-2 USB with audio cables, (2) power adapters, (2) power cords, (2) sets of rackmount brackets and screws, (8) rubber feet pads, and (1) user's manual. | |
| To connect the local and remote units at a 20% savings, order... | |
| Multimode, 50-Micron, Fiber Optic Bulk Cable, Custom Lengths | EXN25002A |

## ServSwitch DVI-D Plus USB KVM Extender Kits

DVI-D extension without compromise.

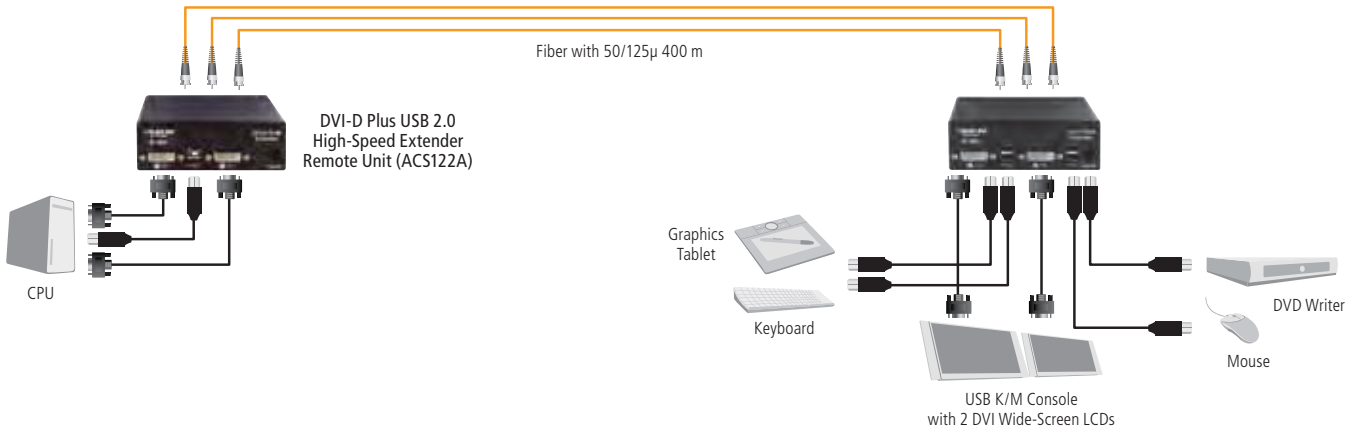
PLATFORMS: PC, Sun™, Mac® | CONNECTORS: USB, DVI-D | CABLE: Fiber SC | PERIPHERALS: USB

- Link up to 400 meters using only one multimode fiber.
- Support resolutions from 640 x 480 to 1920 x 1200.
- No compression, no delay of video data.
- Choose USB HID or transparent USB 2.0 480-Mbps support.
- True EDID read mode.
- Easy setup, no adjustments.
- Dual-head video versions available, too.
- ✦✦ WARRANTY — 2 Years

*ACS122A*

1920 x 1200 at 60 Hz!

new




ServSwitch™ DVI-D Plus USB Extenders give you a choice of USB peripheral connections and preserve the quality of the DVI video signal. They offer real-time transmission without the delays and video compression.

### Save fibers

The USB HID Extenders use course wave division multiplexing (CWDM) technology to convert the DVI 1.0 compliant video signal and the USB HID data of your workstation to pulses of laser light, which travel along one strand of multimode fiber. For the USB 2.0 High-Speed Extenders, the same technology converts the DVI 1.0 signals from the PC or workstation into optical signals. You can place the remote unit up to 400 meters from the local unit.

### USB HID support

The ACS110A and ACS120A support USB HIDs on one or two fiber cables respectively. Keyboards and mice are the most common HIDs, but other devices based on HID protocol, including some touch screens, will work as well.

### USB 2.0 support

The ACS112A and ACS122A use two and three fiber cables respectively to support transparent USB 2.0 at 480 Mbps. You can attach mass storage devices such as memory sticks, CD-ROM drives, or even DVD writers up to 400 meters from the workstation. Up to four USB peripherals are supported on the 4-port hub at the receiver end.

### Local video feed through

The local unit offers a DVI-D feed-through port. This enables you to connect a display at the computer end. Using a second USB output on the PC, local control is possible as long as the operating system supports multiple mice and keyboards.

**CE Approval** —Yes
**RoHS** — Yes

### Dual-head video

Dual-head video versions are available. The ACS120A has USB HID support and uses two fibers, one for each video signal. The ACS122A has USB 2.0 high-speed support, and uses three fibers, one for each video signal and another one for USB 2.0.

| Item | Code |
|---|---|
| ServSwitch DVI-D Plus USB HID Extender Kits | |
| Single-Link, 1920 x 1200 | |
| Single-Head Video | ACS110A |
| Dual-Head Video | ACS120A |
| ✦ Include (1) local unit, (1) receiver unit, (2) universal power supplies, (2) U.S. power cords, (1) or (2) 6-ft. (1.8-m) DVI cables (DVI-D male-to-male), (1) 6-ft. (1.8-m) USB (USB Type A to Type B), and (1) user's manual. | |
| ServSwitch DVI-D Plus USB 2.0 High-Speed Extender Kits | |
| Single-Link, 1920 x 1200 | |
| Single-Head Video | ACS112A |
| Dual-Head Video | ACS122A |
| ✦ Include (1) local unit, (1) receiver unit, (2) universal power supplies, (2) U.S. power cords, (1) or (2) 6-ft. (1.8-m) DVI cables (DVI-D male-to-male), (1) 6-ft. (1.8-m) USB (USB Type A to Type B), and (1) user's manual. | |

## ServSwitch DVI/VGA Fiber Extenders with USB

### Support for today's DVI monitors plus USB keyboards and mice.

PLATFORMS: PC, Sun™, Mac™ | CONNECTORS: USB, DVI-I | CABLE: Multimode-SC©, Single-Mode-SC | PERIPHERALS: USB | FEATURES: FLASH Upgradable

- Extend DVI video up to more than 400 meters over multimode or up to 10 kilometers over single-mode!
- Support resolutions up to 1600 x 1200 at 60 Hz with analog video.
- Provide access to a remote server with VGA or DVI video.
- Ideal for VGA now plus future expansion to DVI.
- Include a 4-port USB hub for USB keyboards, mice, and peripherals.
- Built-in video processors determine the best resolution and pixel phase.
- Upgradable too! Just plug in the programming cable to transfer downloaded updates.
- ✦✦ **WARRANTY** — 2 Years

**CE Approval** — Yes
**RoHS** — Yes

*ACS253A-U-MM*

**DVI plus USB up to 10 kilometers!**

### What's included

- Local unit
- Remote unit
- (2) universal power supplies and cords
- (2) DVI-I male to VGA HD15 female adapter cables
- DVI-I female to VGA HD15 male adapter cable
- DVI-I male-to-female video cable
- USB Type A to Type B cable
- DB9 male to RJ-11 programming cable

| Item | Code |
|---|---|
| ServSwitch™ DVI/VGA Fiber Extenders with USB | |
| Multimode | ACS253A-U-MM |
| Single-Mode | ACS253A-U-SM |
| **You may also need…** | |
| 19" Rackmount Kit | RMK253A |
| USB 2.0 Hub, 4-Port | IC147A-R2 |
| **To connect the local and remote units at a 20% savings, order…** | |
| Premium Ceramic, Multimode, 62.5-Micron Fiber Optic Patch Cable, Duplex, Riser, SC–SC, Custom Lengths *(For specific lengths or plenum cable, see **blackbox.nl**)* | EFN110-SCSC |
| Single-Mode Fiber Optic Cable, Duplex, 9-µm/125-µm, SC–SC, PVC, Custom Lengths | EFE088 |
| USB Version 1.1 Cables, Type A–Type B 10-ft. (3.0-m) *(For other lengths, **blackbox.nl**)* | USB01-0010 |

## ServSwitch DVI Fiber Optic KVM Extenders

### Choose from a variety of DVI-D KVM extension options for multimode or single-mode fiber!

PLATFORMS: PC, Sun™, Mac® | CONNECTORS: PS/2, USB, DVI-D | CABLE: Multimode-LC, Single-Mode-LC | FEATURES: FLASH Upgradable

- Transmit keyboard, mouse, and DVI-D video signals at up to 400 meters over multimode fiber or at up to 10 kilometers over single-mode fiber!
- Support resolutions up to 1920 x 1200.
- All enable dual access for a single user. You can connect a monitor, keyboard, and mouse to the computer and have a KVM console on the remote end. Use your computer at either location!
- Dual DVI models enable you to connect up to two DVI-D monitors to the computer and at the remote KVM console.
- Put a different application on each monitor.
- Or expand an application that uses lots of small windows across both monitors to provide more workspace.
- ✦✦ **WARRANTY** — 2 Years

**CE Approval** — Yes
**RoHS** — Yes

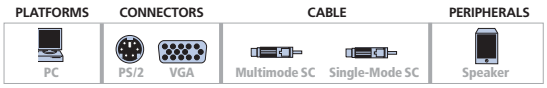
*ACS2209A-SM-R2: local and remote units*

| Item | Code |
|---|---|
| ServSwitch™ DVI Fiber Optic KVM Extenders | |
| Single DVI, PS/2 | |
| Multimode | ACS2009A-R2-MM |
| Single-Mode | ACS2009A-R2-SM |
| Single DVI, USB | |
| Multimode | ACS4001A-R2-MM |
| Single-Mode | ACS4001A-R2-SM |
| Dual DVI, PS/2 | |
| Multimode | ACS2209A-R2-MM |
| Single-Mode | ACS2209A-R2-SM |
| Dual DVI, USB | |
| Multimode | ACS4201A-R2-MM |
| Single-Mode | ACS4201A-R2-SM |

| Item | Code |
|---|---|
| **To connect local and remote units at a 20% savings, order…** | |
| Premium Ceramic, Multimode, 62.5-Micron Fiber Optic Patch Cable, LC–LC, Duplex, Riser, Custom Lengths *(For specific lengths, see **blackbox.nl**)* | EFN110-LCLC |
| Single-Mode, 9-Micron Fiber Optic Cable, LC–LC, Duplex, PVC, Custom Lengths | EFN080 |

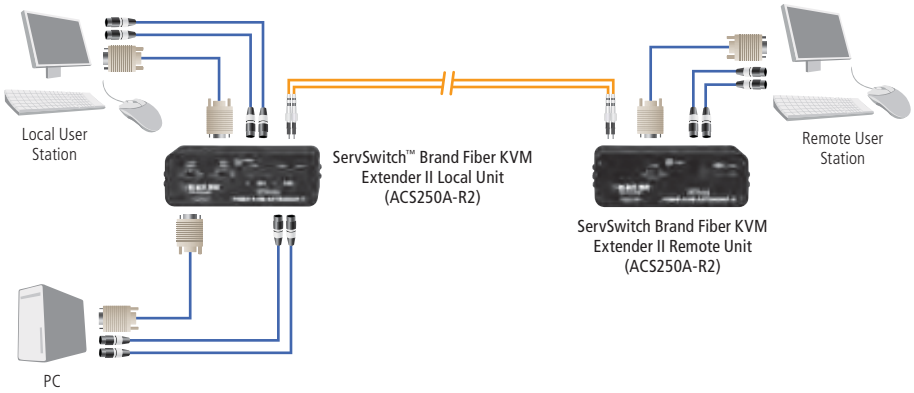
## ServSwitch Brand Fiber KVM Extender II and II–SM

### Get high-quality, digital KVM extension up to 10 kilometers over duplex fiber.




- Sends your data up to 400 meters on 50-µm multimode fiber cable or 10 kilometers on single-mode, fiber cable.
- Digital format ensures high-quality transmission that is immune to electrical interference.
- Transmits KVM signals and audio over a duplex fiber optic cable. Save money by running less cable.
- Supports an optional local monitor, keyboard, and mouse user station.
- Supports many of the most common VGA video standards at resolutions up to 1920 x 1200 at 75 Hz, and all common PS/2 style two-button, three-button, and wheel mice, including Microsoft® IntelliMouse®, plus trackballs and more.
- ✦✦ **WARRANTY** — 1 Year

*ACS250A-R2*


Local User Station
ServSwitch™ Brand Fiber KVM Extender II Local Unit (ACS250A-R2)
ServSwitch Brand Fiber KVM Extender II Remote Unit (ACS250A-R2)
Remote User Station
PC

CE Approval — Yes
RoHS — Yes

| Item | Code |
|---|---|
| ServSwitch™ Brand Fiber KVM Extenders | |
| II (Multimode) | ACS250A-R2 |
| II–SM (Single-Mode) | ACS251A-R2 |
| **You may also need…** | |
| 19" Rackmount Tray | RMK250A |

# A Top-Secret Application

General Atomics Aeronautical Systems, Inc. is a leading manufacturer of unmanned aircraft systems and tactical reconnaissance radar, including the Predator® series aircraft and the Lynx® SAR/GMTI radar sensor systems.

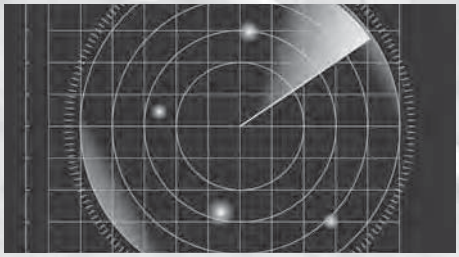
The company builds highly mobile and portable solid-state ground control stations that are used around the world. These stations enable direct, real-time control of the Predator unmanned aerial vehicle.

## A Sensitive Problem

General Atomics Aeronautical contacted Black Box about a solution it needed for these ground control stations. After several discussions with the Black Box Technical Support Team, we provided the company with ServSwitch Brand Fiber KVM Extenders (see **above**).

## Perfect for Field Use

The extenders enable remote access and transmit KVM and audio signals up to 10 km over two-strand fiber optic cable. Because they use fiber optic cable, they are perfect for high EMI/RFI environments. Also, unlike most KVM extenders, which use analog signals, ServSwitch Brand Fiber KVM Extenders use digital signals to maintain top image quality, which is critical in this application.



*Fiber extenders ensure crystal-clear image transmission for applications where image quality is critical.*

## ServSwitch Fiber Optic KVM Extenders

### Extend KVM signals — and even serial and bidirectional stereo audio — up to 1 kilometer!

*ACS335A-AS: left: front and rear views of local unit; right: front and rear views of remote unit*

Immune to interference

- Extend KVM signals up to 1 kilometer.
- Provide sharp resolutions up to 1280 x 1024 at 70 Hz.
- Enables dual access for a single user. You can connect a monitor, keyboard, and mouse at the computer and have a KVM console on the remote end. Use your computer at either location!
- The ACS335A-AS version enables the transmission of full-duplex serial signals up to 19.2 kbps as well as bidirectional stereo audio signals. Connect a set of speakers and a microphone to its receiver unit for multimedia capability.
- The ACS335A-AS also can handle one serial device requiring hardware handshaking or—using breakout cable—up to three 2-wire serial devices requiring TX/RX only.
- ✦✦ WARRANTY — 2 Years

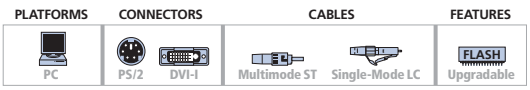
### TECH SPECS

**CE Approval** — Yes
**RoHS** — Yes
**Connectors** — Both local units:
Keyboard and mouse: (4) 6-pin mini DIN F;
Monitor: (1) HD15 M, (1) HD15 F;
Interconnect: (5) ST®;
ACS335A-AS Local unit also includes:
Audio: (2) 3.5-mm jacks;
Serial: (1) DB9 F;
Both remote units:
Keyboard and mouse: (2) 6-pin mini DIN F;
Monitor: (1) HD15 F;
Interconnect: (5) ST;
ACS335A-AS remote unit also includes:
Audio: (2) 3.5-mm jacks;
Serial: (1) DB9 M
**Power** — 90–240 VAC, 47–63 Hz, autosensing
**Size** — 1.7"H x 7.1"W x 5.2"D (4.3 x 18 x 13.2 cm)

| Item | Code |
|---|---|
| ServSwitch™ Fiber Optic KVM Extenders | ACS335A |
| with Serial and Bidirectional Stereo Audio | ACS335A-AS |
| **To connect local and remote units at a 20% savings, order…** | |
| Multimode, 62.5-Micron Breakout-Style Fiber Optic Bulk Cable, 6-Fiber Custom Lengths | EXN1006A |

## ServSwitch DVI/VGA Fiber Extenders

### Use fiber to extend digital DVI and analog VGA signals in electrically noisy environments.




- Get perfect image quality up to 400 meters over multimode or up to 10 kilometers over single-mode!
- Use DVI or VGA video in your KVM extension applications. Ideal for VGA now plus future expansion to DVI.
- Access a server locally and remotely!
- Built-in video processors determine the best resolution and pixel phase.
- All local and remote units feature diagnostic LEDs.
- ✦✦ WARRANTY — 2 Years

*ACS253A-MM*

Picture-perfect images up to 10 kilometers!

### TECH SPECS

**Distance (Maximum)** — Multimode: 200 m (656.1 ft.) with 62.5-/125-µm cable, 400 m (1312.3 ft.) with 50-/125-µm cable;
Single-mode: 10 km (6.2 mi.) with 9-/125-µm cable
**Resolution (Maximum)** — 1600 x 1200 @ 60 Hz; lower resolutions operate @ 75 Hz
**Video Compatibility** —
Analog: VGA to UXGA (separate sync, composite sync, or sync-on-green);
Digital: DVI-I
**Wavelength** — Multimode: 850 nm;
Single-mode: 1300 nm
**CE Approval** — Yes
**RoHS** — Yes
**Connectors** —
Local unit: Keyboard: (2) 6-pin mini DIN F;
Mouse: (2) 6-pin mini DIN F;
Monitor: (2) DVI-I F;
Interconnect: (1) pair of SC;
Remote unit: Keyboard: (1) 6-pin mini DIN F;
Mouse: (1) 6-pin mini DIN F;
Monitor: (1) DVI-I F;
Interconnect: (1) pair of SC
**Power** — 90–240 VAC, 47–63 Hz, autosensing, with IEC 320 connector and cord
**Size** — Each unit: 1.75"H (1U) x 6.7"W x 5.2"D (4.4 x 17 x 13.2 cm)
**Weight** — Each unit: 2.2 lb. (1 kg)

| Item | Code |
|---|---|
| ServSwitch™ DVI/VGA Fiber Extenders | |
| Multimode | ACS253A-MM |
| Single-Mode | ACS253A-SM |
| **You may also need…** | |
| 19" Rackmount Kit | RMK253A |
| **To connect the local and remote units at a 20% savings, order…** | |
| Premium Ceramic, Multimode, 62.5-Micron Fiber Optic Patch Cable, Duplex, Riser, SC–SC, Custom Lengths *(For specific lengths or plenum cable, see **www.blackbox.nl**)* | EFN110-SCSC |
| Single-Mode Fiber Optic Cable, Duplex, 9-µm/125-µm, SC–SC, PVC, Custom Lengths | EFE088 |

# Computer Cables for ServSwitch, ServSwitch Ultra, ServSwitch Multi Video, and ServSwitch Ultra Multi Video

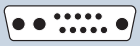
## PS/2 and Multiplatform Computer Cables

- To connect a switch at short distances, order standard PS/2 cables.
- For higher resolutions and greater distances, order coax cables.
- Audio cables have 3.5-mm connectors for stereo speakers and a microphone.
- Low-Smoke, Zero-Halogen cables are for areas where PVC isn't permitted.
- USB computer cables provide connectivity for IBM® PC-compatible computers, Sun™ computers, Apple® computers, and other platforms.
- ✦✦ **WARRANTY** — Lifetime

| Item | Platform | Monitor | Keyboard | Mouse | Audio | Serial | Code |
|---|---|---|---|---|---|---|---|
| ServSwitch™, ServSwitch Ultra™, ServSwitch Multi™ Video, and ServSwitch Ultra Multi Video Cables | | | | | | | |
| Computer Cables | | | | | | | |
| PS/2 Standard | | | | | | | |
| 5-ft. (1.5-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | — | — | EHN151-0005 |
| 10-ft. (3.0-m) | | | | | | | EHN151-0010 |
| 20-ft. (6.0-m) | | | | | | | EHN151-0020 |
| PS/2 Standard with Audio | | | | | | | |
| 5-ft. (1.5-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | 3.5-mm 3.5-mm (Pigtail) | — | EHN151A-0005 |
| 10-ft. (3.0-m) | | | | | | | EHN151A-0010 |
| 20-ft. (6.0-m) | | | | | | | EHN151A-0020 |
| PS/2 Coax | | | | | | | |
| 5-ft. (1.5-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | — | — | EHN382-0005 |
| 10-ft. (3.0-m) | | | | | | | EHN382-0010 |
| 20-ft. (6.0-m) | | | | | | | EHN382-0020 |
| 35-ft. (10.6-m) | | | | | | | EHN382-0035 |
| 50-ft. (15.2-m) | | | | | | | EHN382-0050 |
| 75-ft. (22.8-m) | | | | | | | EHN282-0075 |
| 100-ft. (30.4-m) | | | | | | | EHN282-0100 |
| PS/2 Coax with Audio | | | | | | | |
| 5-ft. (1.5-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | 3.5-mm 3.5-mm (Pigtail) | — | EHN382A-0005 |
| 10-ft. (3.0-m) | | | | | | | EHN382A-0010 |
| 20-ft. (6.0-m) | | | | | | | EHN382A-0020 |
| 35-ft. (10.6-m) | | | | | | | EHN382A-0035 |
| 50-ft. (15.2-m) | | | | | | | EHN382A-0050 |
| 75-ft. (22.8-m) | | | | | | | EHN382A-0075 |
| PS/2 Coax, Low-Smoke, Zero-Halogen | | | | | | | |
| 5-ft. (1.5-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | — | — | EHN382-0005-LS |
| 10-ft. (3.0-m) | | | | | | | EHN382-0010-LS |
| 20-ft. (6.0-m) | | | | | | | EHN382-0020-LS |
| 35-ft. (10.6-m) | | | | | | | EHN382-0035-LS |
| PS/2 Coax for Touch Screen Support | | | | | | | |
| 1-ft. (0.3-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | — | DB9 | EHN382S-0001 |
| 5-ft. (1.5-m) | | | | | | | EHN382S-0005 |
| 10-ft. (3.0-m) | | | | | | | EHN382S-0010 |
| 20-ft. (6.0-m) | | | | | | | EHN382S-0020 |
| USB Coax | | | | | | | |
| 5-ft. (1.5-m) | Multiplatform | HD15 | — | USB Type A | — | — | EHN485-0005 |
| 10-ft. (3.0-m) | | | | | | | EHN485-0010 |
| 20-ft. (6.0-m) | | | | | | | EHN485-0020 |
| 35-ft. (10.6-m) | | | | | | | EHN485-0035 |
| 50-ft. (15.2-m) | | | | | | | EHN485-0050 |
| 75-ft. (22.8-m) | | | | | | | EHN485-0075 |
| 100-ft. (30.4-m) | | | | | | | EHN485-0100 |
| USB Coax with Audio | | | | | | | |
| 5-ft (1.5-m) | Multiplatform | HD15 | — | USB Type A | 3.5-mm 3.5-mm (Pigtail) | — | EHN485A-0005 |
| 10-ft. (3.0-m) | | | | | | | EHN485A-0010 |
| 20-ft. (6.0-m) | | | | | | | EHN485A-0020 |
| 35-ft. (10.6-m) | | | | | | | EHN485A-0035 |
| 50-ft. (15.2-m) | | | | | | | EHN485A-0050 |
| USB Coax, Low-Smoke, Zero-Halogen | | | | | | | |
| 5-ft. (1.5-m) | Multiplatform | HD15 | — | USB Type A | — | — | EHN485-0005-LS |
| 10-ft. (3.0-m) | | | | | | | EHN485-0010-LS |

## Sun Computer Cables

- Sun cables link a ServSwitch to a Sun computer with either 13W3 or HD15 monitor ports.

| Item | Platform | Monitor | Keyboard/Mouse | Audio | Code |
|---|---|---|---|---|---|
| ServSwitch™, ServSwitch Ultra™, ServSwitch Multi™ Video, and ServSwitch Ultra Multi Video Cables (Continued) | | | | | |
| Computer Cables | | | | | |
| Sun™ 13W3 Coax | | | | | |
| 5-ft. (1.5-m) | Sun | 13W3 | 8-Pin Mini DIN (Pigtail) | — | EHN206-0005 |
| 10-ft. (3.0-m) | | | | | EHN206-0010 |
| 20-ft. (6.0-m) | | | | | EHN206-0020 |
| 35-ft. (10.6-m) | | | | | EHN206-0035 |
| 50-ft. (15.2-m) | | | | | EHN206-0050 |
| 75-ft. (22.8-m) | | | | | EHN206-0075 |
| 100-ft. (30.4-m) | | | | | EHN206-0100 |
| Sun 13W3 Coax with Audio | | | | | |
| 5-ft. (1.5-m) | Sun |  13W3 | 8-Pin Mini DIN (Pigtail) | 3.5-mm 3.5-mm (Pigtail) | EHN206A-0005 |
| 20-ft. (6.0-m) | | | | | EHN206A-0020 |
| 35-ft. (10.6-m) | | | | | EHN206A-0035 |
| 75-ft. (22.8-m) | | | | | EHN206A-0075 |
| 100-ft. (30.4-m) | | | | | EHN206A-0100 |
| Sun HD15 Coax | | | | | |
| 5-ft. (1.5-m) | Sun | HD15 | 8-Pin Mini DIN (Pigtail) | — | EHN515-0005 |
| 10-ft. (3.0-m) | | | | | EHN515-0010 |
| 20-ft. (6.0-m) | | | | | EHN515-0020 |
| 35-ft. (10.6-m) | | | | | EHN515-0035 |
| 50-ft. (15.2-m) | | | | | EHN515-0050 |
| 100-ft. (30.4-m) | | | | | EHN515-0100 |
| Sun HD15 Coax with Audio | | | | | |
| 75-ft. (22.8-m) | Sun | HD15 | 8-Pin Mini DIN (Pigtail) | 3.5-mm 3.5-mm (Pigtail) | EHN515A-0075 |
| 100-ft. (30.4-m) | | | | | EHN515A-0100 |

# User Cables for ServSwitch, ServSwitch Ultra, ServSwitch Multi Video, and ServSwitch Ultra Multi Video

## PS/2 User Cables

- Cables for your ServSwitch to workstation connections.
- ✦✦ WARRANTY — Lifetime

| Item | Platform | Monitor | Keyboard | Mouse | Audio | Code |
|---|---|---|---|---|---|---|
| ServSwitch, ServSwitch Ultra, ServSwitch Multi™ Video, and ServSwitch Ultra Multi Video Cables | | | | | | |
| User Cables | | | | | | |
| PS/2 Standard | | | | | | |
| 1-ft. (0.3-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | — | EHN154-0001 |
| 5-ft. (1.5-m) | | | | | | EHN154-0005 |
| 10-ft. (3.0-m) | | | | | | EHN154-0010 |
| 20-ft. (6.0-m) | | | | | | EHN154-0020 |
| PS/2 Standard with Audio | | | | | | |
| 1-ft. (0.3-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | 3.5-mm | EHN154A-0001 |
| 5-ft. (1.5-m) | | | | | | EHN154A-0005 |
| 10-ft. (3.0-m) | | | | | | EHN154A-0010 |
| 20-ft. (6.0-m) | | | | | | EHN154A-0020 |
| PS/2 Coax | | | | | | |
| 5-ft. (1.5-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | — | EHN383-0005 |
| 10-ft. (3.0-m) | | | | | | EHN383-0010 |
| 20-ft. (6.0-m) | | | | | | EHN283-0020 |
| 35-ft. (10.6-m) | | | | | | EHN383-0035 |
| 50-ft. (15.2-m) | | | | | | EHN383-0050 |
| 100-ft. (30.4-m) | | | | | | EHN383-0100 |
| PS/2 Coax with Audio | | | | | | |
| 1-ft. (0.3-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | 3.5-mm | EHN383A-0001 |
| 5-ft. (1.5-m) | | | | | | EHN383A-0005 |
| 10-ft. (3.0-m) | | | | | | EHN383A-0010 |
| 20-ft. (6.0-m) | | | | | | EHN383A-0020 |
| 35-ft. (10.6-m) | | | | | | EHN383A-0035 |
| 50-ft. (15.2-m) | | | | | | EHN383A-0050 |
| 75-ft. (22.8-m) | | | | | | EHN383A-0075 |
| 100-ft. (30.4-m) | | | | | | EHN383A-0100 |

For more PS/2 user cables, turn the page.

## PS/2 User Cables (Continued)

- Low-Smoke, Zero-Halogen cables are for areas where PVC isn't permitted.
- Touch Screen Support cables feature a DB9 connector for serial communications between a compatible ServSwitch and a workstation with PS/2 style connectors.
- ✦✦ WARRANTY — Lifetime

## Multiplatform User Cable

- Connect a USB keyboard and mouse to a ServSwitch.
- ✦✦ WARRANTY — 2 Years

| Item | Platform | Monitor | Keyboard | Mouse | Serial | Code |
|---|---|---|---|---|---|---|
| ServSwitch™, ServSwitch Ultra™, ServSwitch Multi™ Video, and ServSwitch Ultra Multi Video Cables (Continued) | | | | | | |
| User Cables | | | | | | |
| PS/2 Coax, Low-Smoke, Zero-Halogen | | | | | | |
| 10-ft. (3.0-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | — | EHN383-0010-LS |
| 20-ft. (6.0-m) | | | | | | EHN383-0020-LS |
| PS/2 Coax for Touch Screen Support | | | | | | |
| 1-ft. (0.3-m) | | | | | | EHN383S-0001 |
| 5-ft. (1.5-m) | | | | | | EHN383S-0005 |
| 10-ft. (3.0-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | DB9 | EHN383S-0010 |
| 20-ft. (6.0-m) | | | | | | EHN383S-0020 |
| 35-ft. (10.6-m) | | | | | | EHN383S-0035 |
| 50-ft. (15.2-m) | | | | | | EHN383S-0050 |
| USB Cable | | | | | | |
| 1-ft. (0.3-m) | | | | | | EHNUSB-0001 |
| 5-ft. (1.5-m) | Multiplatform | HD15 | USB Type A | USB Type A | — | EHNUSB-0005 |
| 10-ft. (3.0-m) | | | | | | EHNUSB-0010 |
| 20-ft. (6.0-m) | | | | | | EHNUSB-0020 |

## Sun User Cables

- Sun® user cables connect a Sun keyboard, mouse, and monitor with either a 13W3 or HD15 connector to the ServSwitch Ultra.
- Audio cables feature 3.5-mm connectors for both stereo speakers and a microphone.
- ✦✦ WARRANTY — Lifetime

| Item | Platform | Monitor | Keyboard/Mouse | Audio | Code |
|---|---|---|---|---|---|
| ServSwitch™, ServSwitch Ultra™, ServSwitch Multi™ Video, and ServSwitch Ultra Multi Video Cables (Continued) | | | | | |
| User Cables | | | | | |
| Sun 13W3 Coax | | | | | |
| 1-ft. (0.3-m) | | | | | EHN201-0001 |
| 5-ft. (1.5-m) | | | | | EHN201-0005 |
| 10-ft. (3.0-m) | | | | | EHN201-0010 |
| 20-ft. (6.0-m) | Sun | 13W3 | 8-Pin Mini DIN (Pigtail) | — | EHN201-0020 |
| 35-ft. (10.6-m) | | | | | EHN201-0035 |
| 50-ft. (15.2-m) | | | | | EHN201-0050 |
| 100-ft. (30.4-m) | | | | | EHN201-0100 |
| Sun 13W3 Coax with Audio | | | | | |
| 5-ft. (1.5-m) | | | | | EHN201A-0005 |
| 75-ft. (22.8-m) | Sun | 13W3 | 8-Pin Mini DIN (Pigtail) | 3.5 mm 3.5 mm (Pigtail) | EHN201A-0075 |
| 100-ft. (30.4-m) | | | | | EHN201A-0100 |
| Sun HD15 Coax | | | | | |
| 5-ft. (1.5-m) | | | | | EHN225-0005 |
| 10-ft. (3.0-m) | | | | | EHN225-0010 |
| 20-ft. (6.0-m) | | | | | EHN225-0020 |
| 35-ft. (10.6-m) | Sun | HD15 | 8-Pin Mini DIN (Pigtail) | — | EHN225-0035 |
| 50-ft. (15.2-m) | | | | | EHN225-0050 |
| 75-ft. (22.8-m) | | | | | EHN225-0075 |
| 100-ft. (30.4-m) | | | | | EHN225-0100 |
| Sun HD15 Coax with Audio | | | | | |
| 5-ft. (1.5-m) | | | | | EHN225A-0005 |
| 75-ft. (22.8-m) | Sun | HD15 | 8-Pin Mini DIN (Pigtail) | 3.5 mm 3.5 mm (Pigtail) | EHN225A-0075 |
| 100-ft. (30.4-m) | | | | | EHN225A-0100 |

# Computer Cables for ServSwitch Affinity, Matrix ServSwitch, and Multiplatform Matrix ServSwitch

## PS/2 and Multiplatform Computer Cables

- To connect a switch at short distances, order PS/2 standard cables. For higher resolutions and greater distances, order PS/2 coax cables.
- Low-Smoke, Zero-Halogen cables are for areas where PVC isn't permitted.

These cables are available for PS/2 and USB connections.

- USB computer cables provide connectivity for IBM® PC-compatible computers, Sun® computers, Apple® computers, and other platforms.
- ✦✦ WARRANTY — Lifetime

| Item | Platform | Monitor | Keyboard | Mouse | Audio | Serial | Code |
|---|---|---|---|---|---|---|---|
| ServSwitch Affinity™, Matrix ServSwitch, and Multiplatform Matrix ServSwitch Cables | | | | | | | |
| Computer Cables | | | | | | | |
| PS/2 Standard | | | | | | | |
| 5-ft. (1.5-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | — | — | EHN151-0005 |
| 10-ft. (3.0-m) | | | | | | | EHN151-0010 |
| 20-ft. (6.0-m) | | | | | | | EHN151-0020 |
| PS/2 Coax | | | | | | | |
| 5-ft. (1.5-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | — | — | EHN382-0005 |
| 10-ft. (3.0-m) | | | | | | | EHN382-0010 |
| 20-ft. (6.0-m) | | | | | | | EHN382-0020 |
| 35-ft. (10.6-m) | | | | | | | EHN382-0035 |
| 50-ft. (15.2-m) | | | | | | | EHN382-0050 |
| 75-ft. (22.8-m) | | | | | | | EHN282-0075 |
| 100-ft. (30.4-m) | | | | | | | EHN282-0100 |
| PS/2 Coax, Low-Smoke, Zero-Halogen | | | | | | | |
| 5-ft. (1.5-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | — | — | EHN382-0005-LS |
| 10-ft. (3.0-m) | | | | | | | EHN382-0010-LS |
| 20-ft. (6.0-m) | | | | | | | EHN382-0020-LS |
| 35-ft. (10.6-m) | | | | | | | EHN382-0035-LS |
| USB Coax | | | | | | | |
| 5-ft. (1.5-m) | Multiplatform | HD15 | USB Type A (Pigtail) | | — | — | EHN485-0005 |
| 10-ft. (3.0-m) | | | | | | | EHN485-0010 |
| 20-ft. (6.0-m) | | | | | | | EHN485-0020 |
| 35-ft. (10.6-m) | | | | | | | EHN485-0035 |
| 50-ft. (15.2-m) | | | | | | | EHN485-0050 |
| 75-ft. (22.8-m) | | | | | | | EHN485-0075 |
| 100-ft. (30.4-m) | | | | | | | EHN485-0100 |
| USB Coax, Low-Smoke, Zero-Halogen | | | | | | | |
| 5-ft. (1.5-m) | Multiplatform | HD15 | USB Type A (Pigtail) | | — | — | EHN485-0005-LS |
| 10-ft. (3.0-m) | | | | | | | EHN485-0010-LS |

## Sun Computer Cables

- Sun® computer cables connect a ServSwitch™ to a Sun CPU with either 13W3 or HD15 monitor ports.
- ✦✦ WARRANTY — Lifetime

*NOTE: EHN206 and EHN515 computer cables are not for use with the Matrix ServSwitch.*

For user, expansion, and serial cables, see p. 76.

| Item | Platform | Monitor | Keyboard/Mouse | Code |
|---|---|---|---|---|
| ServSwitch Affinity™ and Multiplatform Matrix ServSwitch Cables (Continued) | | | | |
| Computer Cables | | | | |
| Sun 13W3 Coax | | | | |
| 5-ft. (1.5-m) | Sun | 13W3 | 8-Pin Mini DIN (Pigtail) | EHN206-0005 |
| 10-ft. (3.0-m) | | | | EHN206-0010 |
| 20-ft. (6.0-m) | | | | EHN206-0020 |
| 35-ft. (10.6-m) | | | | EHN206-0035 |
| 50-ft. (15.2-m) | | | | EHN206-0050 |
| 75-ft. (22.8-m) | | | | EHN206-0075 |
| 100-ft. (30.4-m) | | | | EHN206-0100 |
| Sun HD15 Coax | | | | |
| 5-ft. (1.5-m) | Sun | HD15 | 8-Pin Mini DIN (Pigtail) | EHN515-0005 |
| 10-ft. (3.0-m) | | | | EHN515-0010 |
| 20-ft. (6.0-m) | | | | EHN515-0020 |
| 35-ft. (10.6-m) | | | | EHN515-0035 |
| 50-ft. (15.2-m) | | | | EHN515-0050 |
| 100-ft. (30.4-m) | | | | EHN515-0100 |

# User Cables for ServSwitch Affinity, Matrix ServSwitch, and Multiplatform Matrix ServSwitch

## PS/2 and Multiplatform User Cables

- Make ServSwitch™ to workstation connections.
- To connect a switch at short distances, order PS/2® standard cables. For higher resolutions and greater distances, order PS/2 coax cables.
- Low-smoke, Zero-Halogen cables are for areas where PVC isn't permitted.
- USB cable enables you to connect a USB keyboard and mouse to a flash-upgradable ServSwitch.
- ✦✦ WARRANTY — EHNUSB: 2 Years; All others: Lifetime

| Item | Platform | Monitor | Keyboard | Mouse | Audio | Code |
|---|---|---|---|---|---|---|
| ServSwitch Affinity™, Matrix ServSwitch™, and Multiplatform Matrix ServSwitch Cables (Continued) | | | | | | |
| User Cables | | | | | | |
| PS/2 Standard | | | | | | |
| 1-ft. (0.3-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | — | EHN154-0001 |
| 5-ft. (1.5-m) | | | | | | EHN154-0005 |
| 10-ft. (3.0-m) | | | | | | EHN154-0010 |
| 20-ft. (6.0-m) | | | | | | EHN154-0020 |
| PS/2 Coax | | | | | | |
| 5-ft. (1.5-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | — | EHN383-0005 |
| 10-ft. (3.0-m) | | | | | | EHN383-0010 |
| 20-ft. (6.0-m) | | | | | | EHN283-0020 |
| 35-ft. (10.6-m) | | | | | | EHN383-0035 |
| 50-ft. (15.2-m) | | | | | | EHN383-0050 |
| 100-ft. (30.4-m) | | | | | | EHN383-0100 |
| PS/2 Coax, Low-Smoke, Zero-Halogen | | | | | | |
| 10-ft. (3.0-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | — | EHN383-0010-LS |
| 20-ft. (6.0-m) | | | | | | EHN383-0020-LS |
| USB Coax | | | | | | |
| 1-ft. (0.3-m) | Multiplatform | HD15 | USB Type A | USB Type A | — | EHNUSB-0001 |
| 5-ft. (1.5-m) | | | | | | EHNUSB-0005 |
| 10-ft. (3.0-m) | | | | | | EHNUSB-0010 |
| 20-ft. (6.0-m) | | | | | | EHNUSB-0020 |

## Sun User Cables

- Sun® user cables connect a Sun keyboard, mouse, and monitor with either a 13W3 or an HD15 connector to a ServSwitch Affinity or a Multiplatform Matrix ServSwitch.
- ✦✦ WARRANTY — Lifetime

*NOTE: EHN201 and EHN225 user cables are not for use with the Matrix ServSwitch.*

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| Item | Platform | Monitor | Keyboard/Mouse | Code |
|---|---|---|---|---|
| ServSwitch Affinity™ and Multiplatform Matrix ServSwitch™ Cables (Continued) | | | | |
| User Cables | | | | |
| Sun 13W3 Coax | | | | |
| 1-ft. (0.3-m) | Sun | 13W3 | 8-Pin Mini DIN (Pigtail) | EHN201-0001 |
| 5-ft. (1.5-m) | | | | EHN201-0005 |
| 10-ft. (3.0-m) | | | | EHN201-0010 |
| 20-ft. (6.0-m) | | | | EHN201-0020 |
| 35-ft. (10.6-m) | | | | EHN201-0035 |
| 50-ft. (15.2-m) | | | | EHN201-0050 |
| 100-ft. (30.4-m) | | | | EHN201-0100 |
| Sun HD15 Coax | | | | |
| 5-ft. (1.5-m) | Sun | HD15 | 8-Pin Mini DIN (Pigtail) | EHN225-0005 |
| 10-ft. (3.0-m) | | | | EHN225-0010 |
| 20-ft. (6.0-m) | | | | EHN225-0020 |
| 35-ft. (10.6-m) | | | | EHN225-0035 |
| 50-ft. (15.2-m) | | | | EHN225-0050 |
| 75-ft. (22.8-m) | | | | EHN225-0075 |
| 100-ft. (30.4-m) | | | | EHN225-0100 |

For computer cables, see p.75.

## Expansion Cables for ServSwitch Affinity, Matrix ServSwitch, and Multiplatform Matrix ServSwitch

- Daisychain multiple ServSwitch™ chassis to add more computers or user stations.
- Versions for 1-, 2-, and 4-user chassis architecture connect multiple ServSwitch Affinity, Matrix ServSwitch, and Multiplatform Matrix ServSwitch units (**blackbox.nl**).
- Version for 8- and 16-user chassis architecture connect multiple ServSwitch Affinity units.
- Daisychain units in a bus, split-bus*, or ring topology.
- ✦✦ WARRANTY — KV140010: Lifetime; All others: 1 Year

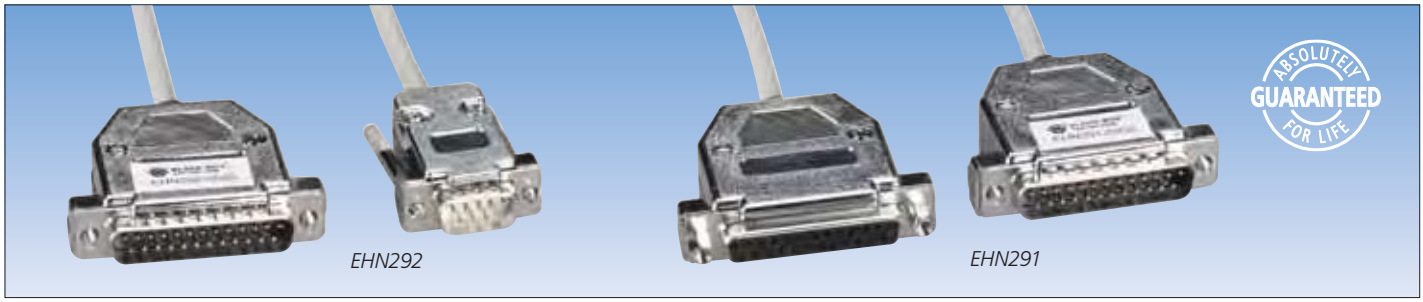
**RoHS** — KV140010-PL, KV140050-PL, KV140100-PL, KV1808010-PL

** NOTE: 16-user bus topologies are not recommended.*

| Item | Code |
|---|---|
| ServSwitch Affinity™, Matrix ServSwitch, and Multiplatform Matrix ServSwitch Cables (Continued) | |
| Expansion Cables (DB15) | |
| PVC 1-/2-/4-User | |
| 10-ft. (3.0-m) | KV140010 |
| 50-ft. (15.2-m) | KV140050 |
| 100-ft. (30.4-m) | KV140100 |
| Plenum 1-/2-/4-User | |
| 10-ft. (3.0-m) | KV140010-PL |
| 50-ft. (15.2-m) | KV140050-PL |
| 100-ft. (30.4-m) | KV140100-PL |

| Item | Code |
|---|---|
| ServSwitch Affinity, Matrix ServSwitch, and Multiplatform Matrix ServSwitch Cables (Continued) | |
| Expansion Cables (HD15) | |
| PVC 8-/16-User | |
| 10-ft. (3.0-m) | KV180010 |
| 50-ft. (15.2-m) | KV180050 |
| 100-ft. (30.4-m) | KV180100 |
| Plenum 8-/16-User | |
| 10-ft. (3.0-m) | KV180010-PL |
| 100-ft. (30.4-m) | KV180100-PL |

## Serial Cables for ServSwitch Affinity and Multiplatform Matrix ServSwitch




- Connect serial devices up to 15 meter from your ServSwitch.
- Use with ServSwitch Affinity models (R2 versions) and Multiplatform Matrix ServSwitch models (R4 versions).
- Configure switches' CPU ports as serial ports.
- ✦✦ WARRANTY — Lifetime

**RoHS** — EHN291-0005, EHN292-0005, EHN293-0005, EHN293-0010

*NOTE: EHN290–EHN293 serial cables are not for use with the Matrix ServSwitch.*

| Item | Code |
|---|---|
| ServSwitch Affinity™ and Multiplatform Matrix ServSwitch Cables (Continued) | |
| Serial Cables | |
| DTE Cables with DB9 Female Connector | |
| 5-ft. (1.5-m) | EHN290-0005 |
| 10-ft. (3.0-m) | EHN290-0010 |
| 20-ft. (6.0-m) | EHN290-0020 |
| DTE Cables with DB25 Female Connector | |
| 5-ft. (1.5-m) | EHN291-0005 |
| 10-ft. (3.0-m) | EHN291-0010 |
| 20-ft. (6.0-m) | EHN291-0020 |
| 35-ft. (10.6-m) | EHN291-0035 |
| 50-ft. (15.2-m) | EHN291-0050 |

| Item | Code |
|---|---|
| ServSwitch Affinity and Multiplatform Matrix ServSwitch Cables (Continued) | |
| Serial Cables | |
| DCE Cables with DB9 Male Connector | |
| 5-ft. (1.5-m) | EHN292-0005 |
| 10-ft. (3.0-m) | EHN292-0010 |
| 20-ft. (6.0-m) | EHN292-0020 |
| 50-ft. (15.2-m) | EHN292-0050 |
| DCE Cables with DB25 Male Connector | |
| 5-ft. (1.5-m) | EHN293-0005 |
| 10-ft. (3.0-m) | EHN293-0010 |
| 35-ft. (10.6-m) | EHN293-0035 |
| 50-ft. (15.2-m) | EHN293-0050 |

## Computer Cables for ServSwitch Uno, ServSwitch Uno USB, ServSwitch Duo, ServSwitch Duo USB, ServSwitch Quadro, ServSwitch Wizard, ServSwitch Wizard IP, ServSwitch Wizard LP, ServSwitch Wizard PRO, Multihead ServSwitch, and ServShare II

### PS/2 Cable

- Use it for distances up to 15.2 meter.
- PS/2 connectors are color coded and labeled for instant identification.
- ✦✦ WARRANTY — Lifetime

### Flash Cables

- Our EHN428 cable connects IBM® compatible, Macintosh®, and Sun CPUs with a USB Type A keyboard and mouse connector to a ServSwitch™ with PS/2 connectors.
- Our EHN429 cable connects Sun CPUs with an 8-pin mini DIN keyboard and mouse connector to a ServSwitch with PS/2 connectors.
- Fully emulate USB or Sun keyboard and mouse signals.
- Both cables contain a mini-microprocessor circuit that is flash upgradable for future applications.
- Downloadable drivers are compatible with extra keys (Search, Home, Back, Forward, etc.) supported by Windows® 2000 and Windows XP.
- EHN428 detects and suppresses annoying USB "phantom" keys.
- EHN429 enables extra Sun keystrokes to be generated by PS/2 key combinations.
- ✦✦ WARRANTY — 2 Years

RoHS — Yes

| Platform | Monitor | Keyboard/Mouse | | |
|---|---|---|---|---|
| PS/2 | HD15 | (2) 6-Pin Mini DIN (EHN408) | or (1) USB Type A (EHN428) | or (1) 8-Pin Mini DIN (EHN429) |

| Item | | Code |
|---|---|---|
| ServSwitch Uno™, ServSwitch Uno USB, ServSwitch Duo™, ServSwitch Duo USB, ServSwitch Quadro™, ServSwitch Wizard™, ServSwitch Wizard IP, ServSwitch Wizard LP, ServSwitch Wizard PRO, Multihead ServSwitch, and ServShare™ II Cables | | |
| Computer Cable | | |
| PS/2 | | |
| 5-ft. | (1.5-m) | EHN408-0005 |
| 10-ft. | (3.0-m) | EHN408-0010 |
| 20-ft. | (6.0-m) | EHN408-0020 |
| PS/2 to USB Flash | | |
| 6-ft. | (1.8-m) | EHN428-0006 |
| 16-ft. | (4.8-m) | EHN428-0016 |
| 32.8-ft. | (10.0-m) | EHN428-010M |
| PS/2 to Sun® Flash | | |
| 6-ft. | (1.8-m) | EHN429-0006 |
| 16-ft. | (4.8-m) | EHN429-0016 |
| For each additional CPU monitor connection with the Multihead ServSwitch, or to extend the distance between additional monitors and the Multihead ServSwitch, order… | | |
| VGA Video Cables with Ferrite Core, HD15, PVC, Male/Male | | |
| 3-ft. | (0.9-m) | EVNPS06-0003-MM |
| 5-ft. | (1.5-m) | EVNPS06-0005-MM |
| 10-ft. | (3.0-m) | EVNPS06-0010-MM |

## Computer Cable for ServSwitch USB and ServSwitch USB Plus

Here is the cable you need for ServSwitch to CPU connections.

ABSOLUTELY GUARANTEED FOR LIFE

- This zip cord-style cable features two cables in one: a video cable and a USB cable.
- Use these cables for connecting USB-enabled CPUs and servers to the ServSwitch USB and the ServSwitch USB Plus (**blackbox.nl**).
- The cables feature molded plastic hoods. The USB cable features a foil shield. The video cable includes a braid and foil shield.
- Distance is limited by the USB specification.
- ✦✦ WARRANTY — Lifetime

| Platform | Monitor | USB Connectors | |
|---|---|---|---|
| PC or Mac® | HD15 | USB Type A | USB Type B |

### TECH SPECS

**Hood Assembly** — Molded plastic
**Jacket Assembly** — PVC
**Shielding** — USB: Foil; RGB video: Braid and foil
**Wire Gauge** — USB: 26 AWG stranded copper; RGB video: 24 AWG RGB coax
**RoHS** — Yes
**Connectors** — CPU or server: (1) USB Type A; Monitor: (1) HD15 M; ServSwitch: (1) HD15 M and (1) USB Type B

*NOTE: To connect workstations to the ServSwitch USB or ServSwitch USB Plus, use the cables that came with your keyboards, monitors, and mice.*

| Item | | Code |
|---|---|---|
| ServSwitch USB and ServSwitch USB Plus Cables | | |
| Computer Cable | | |
| USB | | |
| 4-ft. | (1.2-m) | EHN810-0004 |
| 8-ft. | (2.4-m) | EHN810-0008 |
| 12-ft. | (3.6-m) | EHN810-0012 |
| 16-ft. | (4.8-m) | EHN810-0016 |

## Computer Cables for ServSwitch Secure, ServShare, ServSwitch Remote, and ServSwitch Ultra Remote

### PS/2 and Multiplatform Computer Cables

- For short distances, order standard PS/2 cables. For higher resolutions and greater distances, order coax PS/2 cables.
- Low-Smoke, Zero-Halogen cables are for areas where PVC isn't permitted.
- USB computer cables provide connectivity for IBM® PC-compatible computers, Sun® computers, Apple® computers, and more.
- ✦✦ WARRANTY — Lifetime

| Item | Platform | Monitor | Keyboard | Mouse | Code |
|---|---|---|---|---|---|
| ServSwitch™ Secure, ServShare™, ServSwitch Remote, and ServSwitch Ultra Remote Cables | | | | | |
| Computer Cables | | | | | |
| PS/2 Standard | | | | | |
| 5-ft. (1.5-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | EHN151-0005 |
| 10-ft. (3.0-m) | | | | | EHN151-0010 |
| 20-ft. (6.0-m) | | | | | EHN151-0020 |
| PS/2 Coax | | | | | |
| 5-ft. (1.5-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | EHN382-0005 |
| 10-ft. (3.0-m) | | | | | EHN382-0010 |
| 20-ft. (6.0-m) | | | | | EHN382-0020 |
| 35-ft. (10.6-m) | | | | | EHN382-0035 |
| 50-ft. (15.2-m) | | | | | EHN382-0050 |
| 75-ft. (22.8-m) | | | | | EHN282-0075 |
| 100-ft. (30.4-m) | | | | | EHN282-0100 |
| PS/2 Coax, Low-Smoke, Zero-Halogen | | | | | |
| 5-ft. (1.5-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | EHN382-0005-LS |
| 10-ft. (3.0-m) | | | | | EHN382-0010-LS |
| 20-ft. (6.0-m) | | | | | EHN382-0020-LS |
| 35-ft. (10.6-m) | | | | | EHN382-0035-LS |
| USB Coax | | | | | |
| 5-ft. (1.5-m) | Multiplatform | HD15 | USB Type A (Pigtail) | | EHN485-0005 |
| 10-ft. (3.0-m) | | | | | EHN485-0010 |
| 20-ft. (6.0-m) | | | | | EHN485-0020 |
| 35-ft. (10.6-m) | | | | | EHN485-0035 |
| 50-ft. (15.2-m) | | | | | EHN485-0050 |
| 75-ft. (22.8-m) | | | | | EHN485-0075 |
| 100-ft. (30.4-m) | | | | | EHN485-0100 |

## User Cables for ServSwitch Secure, ServShare, ServSwitch Remote, and ServSwitch Ultra Remote

### PS/2 and Multiplatform User Cables

- To connect a switch at short distances, order standard cables. For higher resolutions and greater distances, order coax cables.
- Low-Smoke, Zero-Halogen cables are for areas where PVC isn't permitted.
- Nonflashable cable works with ServSwitch Secure models only.
- ✦✦ WARRANTY — EHNUSBNF1: 2 Years; All others: Lifetime

| Item | Platform | Monitor | Keyboard | Mouse | Code |
|---|---|---|---|---|---|
| ServSwitch™ Secure, ServShare™, ServSwitch Remote, and ServSwitch Ultra Remote Cables | | | | | |
| User Cables | | | | | |
| PS/2 Standard | | | | | |
| 1-ft. (0.3-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | EHN154-0001 |
| 5-ft. (1.5-m) | | | | | EHN154-0005 |
| 10-ft. (3.0-m) | | | | | EHN154-0010 |
| 20-ft. (6.0-m) | | | | | EHN154-0020 |
| PS/2 Coax | | | | | |
| 5-ft. (1.5-m) | PS/2 | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | EHN383-0005 |
| 10-ft. (3.0-m) | | | | | EHN383-0010 |
| 20-ft. (6.0-m) | | | | | EHN283-0020 |
| 35-ft. (10.6-m) | | | | | EHN383-0035 |
| 50-ft. (15.2-m) | | | | | EHN383-0050 |
| 100-ft. (30.4-m) | | | | | EHN383-0100 |
| PS/2 Coax, Low-Smoke, Zero-Halogen | | | | | |
| 10-ft. (3.0-m) | Multiplatform | HD15 | 6-Pin Mini DIN | 6-Pin Mini DIN | EHN383-0010-LS |
| 20-ft. (6.0-m) | | | | | EHN383-0020-LS |
| USB to PS/2 Nonflashable Cable | | | | | |
| 1-ft. (0.3-m) | Multiplatform | HD15 | USB Type A | USB Type A | EHNUSBNF1-0001 |
| 5-ft. (1.5-m) | | | | | EHNUSBNF1-0005 |
| 10-ft. (3.0-m) | | | | | EHNUSBNF1-0010 |
| 20-ft. (6.0-m) | | | | | EHNUSBNF1-0020 |

## GHOST Emulators

Our mouse and keyboard emulators scare away connectivity issues.

*AC247A*

*AC244A*

*NOTE: The AC244A works best when used with switches or extenders that supply their own power. If you're connecting a PS/2 mouse directly, a low-powered mouse is recommended. Some mice might not operate properly if they draw more power than the serial port can provide.*

- Your computer will boot and run flawlessly without an attached keyboard or mouse, making accidental use of the computer impossible and purposeful misuse more difficult.
- Plug a keyboard and mouse into the device when you need to operate the computer.
- The AC244A translates between AT® serial and PS/2 mouse protocols automatically.
- PS/2 connectors on AC247A have PC99 color coding for instant identification.
- ✦✦ WARRANTY — 1 Year

### TECH SPECS

**Hardware Requirements** — AC244A: PC with AT serial mouse port; AC247A: PC with PS/2 keyboard and mouse ports
**CE Approval** — Yes
**RoHS** — Yes
**Connectors** — AC244A: (1) DB9 F, (1) 6-pin mini DIN F; AC247A: PC connection: (2) 6-pin mini DIN M; optional keyboard and mouse connection: (2) 6-pin mini DIN F
**Power** — From the PC

| Item | Code |
|---|---|
| GHOST Emulators | |
| AT→PS/2 Mouse | AC244A |
| PS/2 Keyboard and Mouse | AC247A |

## USB to PS/2 Converters

Connect your PS/2 keyboard and mouse to a USB computer!

**CE Approval** — KVUSB2PS2
**RoHS** — KVUSB2PS2

*KVUSB*

*KVUSB2PS2*

### Flashable or Nonflashable USB to PS/2 Converters

- Both converters must be used with PS/2 style ServSwitch user cables.
- Flashable converter works with the following switches. Go to **blackbox.nl** for complete information on these products.
  - ServSwitch Ultra™
  - The original ServSwitch™
  - Matrix ServSwitch
  - ServSwitch Affinity™
  - ServSwitch Ultra Remote
  - ServSwitch Multi Video and ServSwitch Ultra Multi Video
- ✦✦ WARRANTY — 2 Years

### USB to PS/2 Flash-Upgradable Converter Cable

- Converts PS/2 keyboard and mouse signals to the USB interface.
- Supports PC, Macintosh®, and Sun™ USB computers and servers.
- Flash-upgradability makes updating easy.
- Also great for KVM switching applications with our ServSwitch™ solutions.
- ✦✦ WARRANTY — 2 Years

| Item | Code |
|---|---|
| USB to PS/2 Flashable Converter | KVUSB |
| USB to PS/2 Nonflashable Converter | KVUSBNF |
| USB to PS/2 Flash-Upgradable Converter Cable | KVUSB2PS2 |

## Buyer's Guide | Replacement Power Supplies

For product details, see the page listed or go to **blackbox.nl**.

| Product Names | Product Codes | Page Numbers | Compatible Power Supply SKU |
|---|---|---|---|
| ServSwitch™ Secure KVM Switch, ServSwitch KVM Switch, ServSwitch Ultra™ KVM Switch | SW721A-Rx, KV3104MA-Rx, KV3104MN-Rx, KV5002MA-Rx, KV5004MA-Rx, MV5004MN-Rx, SW722A-R2 | **blackbox.nl** | PS024-R2 |
| ServSelect™ SAM, ServSwitch Octet™ SAM | KV123A, KV1724A | **blackbox.nl** | PS123A |
| ServSwitch Wizard™ Extenders (in chassis) and Rackmount Chassis, ServSwitch Wizard Skew Compensator | ACU5000 Series Extenders (when in rack shelf), ACU5100 Series Extenders (when in rack shelf) | **blackbox.nl** | PS5000-R2 |
| ServSwitch USB Plus, ServSwitch Wizard DVI, ServSwitch Uno™, ServSwitch Duo™, ServSwitch Quadro™, ServSwitch Wizard PRO ServSwitch Wizard (Rear-Access Chassis), ServSwitch Wizard Rackmount Chassis, ServSwitch Wizard Skew Compensator, ServSwitch Wizard LP, ServSwitch Wizard MP for Sun and Mac, ServSwitch Wizard DVI Dual-Link, ServSwitch CX KVM | KV6104SA-R2, KV6108SA-R2, KV6112FA-R2, KV6116FA-R2, SW644A, SW648A, KV6016FA-R2, KV6508SA, KV1002A-R2, KV1004A-R2, SW651A, SW652A, ACU5000 Series Extenders (Standalone), ACU5100 Series Extenders (Standalone), SW642A, KV805A, KV6416FA-R2, KV822A, KV824A, KV2X04A, KV2008A, KV3X04A, KV0416A-R2, KV0424A-R2, KV1416A-R2, KV1424A-R2 | **pp. 14-15, 30 blackbox.nl** | PS649-R3 |
| ServSwitch Wizard DVI | KV1022A-R2, KV1024A-R2, KV1042A-R2, KV1044A-R2 | **blackbox.nl** | PS650 |
| ServSwitch DT Low-Profile KVM Switch, ServSwitch DT Series DVI, ServSwitch EC for PS/2, ServSwitch EC for PS/2 and USB, ServSwitch EC for PS/2 and USB Servers | KV7000A, KV7001A, KV9502A, KV9504A, KV9004A, KV9008A, KV9016A, KV9104A, KV9108A, KV9116A, KV9204A, KV9208A, KV9216A | **p. 16, blackbox.nl** | PS7090 |
| ServSwitch DT Pro II | PS for KV7020A, KV7021A | **Call for information** | PS72021 |
| ServSwitch EC with Built-In IP for PS/2 and USB with PS/2 Consoles and USB Servers | KV9304A-R2, KV9308A-R2, KV9316A-R2, KV9404A, KV9408A, KV9416A | **p. 16** | PS9300 |
| ServTray™ Complete | KVT41XA-R2 | **pp. 42–43** | PS-KVT2 |
| ServSwitch Extra Power Supply | Used to supply 5 volts on a PS/2 connector | **blackbox.nl** | PSMD6 |
| ServSwitch Brand CAT5 and CATx Extenders with 9-VDC Output | ACU1001A, ACU1002A, ACU1008A, ACU1009A, ACU1004A, ACU1005A, ACU1022A, ACU1028A, ACU3001A, ACU3009A, ACU3022A, ACUREM, ACUSREM, ACUMREM, ACUVREM, ACUWREM, ACUREMSW, ACU1049A, ACU1006MRA, AND ACU1006MRVA, ACU2001A, ACU2009A, ACU2022A, ACU2028A, ACUR004A, and ACURA004A | **pp. 53–54 blackbox.nl** | PSU1002E-R3 |
| ServSwitch and Rackmount ServSwitch Extenders and Extender Hubs with 5-VDC Output | ACU1006RA, ACU1006DRA, ACU1006SRA, ACU1006VRA, ACU1006DSRA, ACU1006DVRA, ACU1012RA, ACU1007A ACU2201A Local, ACU2222A Local | **pp. 53–54** | PSU1006E-R3 |
| ServReach™ KVMCube KVMoIP (1 x 1) | KVIP1001A | **blackbox.nl** | KVIP1001-PS |
| ServSwitch DVI/VGA CATx Extenders, ServSwitch DVI/VGA Fiber Extenders, ServSwitch DVI/VGA Fiber Extenders with USB | ACS253A-CT, ACS253A-MM, ACS253A-SM ACS253A-U-MM, ACS253A-U-SM | **pp. 60, 69** | PS253A |
| ServSwitch DTX Transmitters and Receivers | DTX5000-T, DTX5000-R, DTX5002-T, DTX5002-R DTX5001A-T, DTX5001A-R | **pp. 48-49** | DTX5000-PS |

## Black Box Explains

### KVM Switching.

There are a number of ways to switch your Black Box ServSwitch to another PC. There are: push buttons (on the switch itself), remote control push buttons, hot-keys (key-combinations), OSD (on-screenmenu), serial commands (via a separate serial port) and even mouse-switching (using wheel and buttons or mouse-movement). Not all our ServSwitches support all these features and some only support one.

Ask Tech Support for more details.

## ServSwitch Ultra Remote

### Worldwide reach: remote access to your servers over your LAN or WAN.

- Access remote servers over Ethernet.
- Maximum resolution of 1280 x 1024.
- Front panel shows power and connected ports.
- Easily installed remote client application requires no licensing.
- ✦✦ WARRANTY — 1 Year

CE Approval — Yes
RoHS — ACR9004A

| Item | Code |
|---|---|
| ServSwitch Ultra™ Remote | ACR9000A |
| ServSwitch Ultra Remote, Dual | ACR9002A |
| ServSwitch Ultra Remote, Quad | ACR9004A |

## 8-Port ServSwitch Duo KVM Switch

### Give 2 users access to up to 8 servers with this multiplatform KVM switch.

- Daisychain this easy-to-use KVM switch to control hundreds of servers!
- 1600 x 1200 maximum resolution.
- Supports DDC.
- Switch ports by hotkeys, on-screen display (OSD), front-panel buttons, or mouse.
- ✦✦ WARRANTY — 2 Years

CE Approval — Yes
RoHS — Yes

| Item | Code |
|---|---|
| 8-Port ServSwitch Duo KVM Switch | KV6108SA-R2 |

## ServSwitch Uno KVM Switch

### Use a PS/2 keyboard and mouse to control up to 16 PC, Mac®, or Sun™ CPUs.

- Enables you to access and control up to 16 CPUs or servers with one keyboard, monitor, and mouse.
- Cascadable to support more servers.
- ✦✦ WARRANTY — 2 Years

CE Approval — Yes
RoHS — Yes

| Item | Code |
|---|---|
| ServSwitch Uno™ KVM Switch 1 x 16 | KV6016FA-R2 |

## 16-Port ServSwitch Duo KVM Switch

### Give 2 users access to up to 16 servers with this multiplatform KVM switch.

- 1600 x 1200 maximum resolution.
- Supports DDC.
- Great for data centers.
- ✦✦ WARRANTY — 2 Years

CE Approval — Yes
RoHS — Yes

| Item | Code |
|---|---|
| 16-Port ServSwitch Duo™ KVM Switch | KV6116FA-R2 |

## ServSwitch Uno USB KVM Switch

### Use a USB keyboard and mouse to control up to 8 PC, Mac, or Sun CPUs.

- Enables a single USB keyboard and mouse user to access eight CPUs.
- Supports a wide range of IBM® compatible computers.
- Flash upgradable via the serial port.
- High-quality video resolution with DDC support.
- ✦✦ WARRANTY — 1 Year

CE Approval — Yes
RoHS — Yes

| Item | Code |
|---|---|
| ServSwitch Uno USB KVM Switch 1 x 8 | KV6508SA |

## ServSwitch Quadro KVM Switch, 16-Port

### Enable 4 users to control up to 16 multiplatform servers.

- Maximum resolution of 1600 x 1200 at 60 Hz.
- Great for data centers.
- Cascadable to support more servers.
- Password security.
- ✦✦ WARRANTY — 2 Years

CE Approval — Yes
RoHS — Yes

| Item | Code |
|---|---|
| ServSwitch Quadro™ KVM Switch, 16-Port | KV6416FA-R2 |

## 4-Port ServSwitch Wizard PRO

Professional desktop or rackmount 4-port KVM switching with on-screen menus.

- Great for users requiring access to desktop computers and laptops.
- Space-saving design eliminates desktop clutter in small office/home office environments.
- Supports Microsoft® Windows® operating systems.
- Plug-and-play—no configuration required.

✦✦ WARRANTY — 2 Years

CE Approval — Yes
RoHS — Yes

| Item | Code |
|---|---|
| 4-Port ServSwitch Wizard™ PRO | SW644A |

## 4-Port ServSwitch KVM Switch, Mini Chassis

The options you want in a 4-port single-user KVM system.

- Ideal for complex office applications.
- Maximum resolution up to 1600 x 1200.
- Supports PC or PC-compatible and select UNIX® CPUs.
- Compatible with ServSwitch Remote (ACR9005A).
- Rackmountable—occupies only 1U (4.4 cm) of space.

✦✦ WARRANTY — 2 Years

CE Approval — Yes

| Item | Code |
|---|---|
| 4-Port ServSwitch™ KVM Switch, Mini Chassis | KV3104MA-R5 |

## 8-Port ServSwitch Wizard PRO

Professional desktop or rackmount 8-port KVM switching with on-screen menus.

- On-screen menus, push button, hotkey, mouse, or remote switching.
- Includes rackmount brackets.
- Supports Microsoft® Windows® operating systems.
- Supports all standard VGA resolutions from 640 x 480 to 1600 x 1200.

✦✦ WARRANTY — 2 Years

CE Approval — Yes
RoHS — Yes

| Item | Code |
|---|---|
| 8-Port ServSwitch Wizard PRO | SW648A |

## 8-Port ServSwitch, Full Chassis

The options you want in an 8-port single-user KVM system.

- Maximum resolution up to 1600 x 1200.
- Supports PC or PC-compatible and select UNIX® CPUs.
- Cabling available to support USB, audio, or serial applications.
- Easy to use.

✦✦ WARRANTY — 2 Years

CE Approval — Yes

| Item | Code |
|---|---|
| 8-Port ServSwitch, Full Chassis | KV3108SA-R5 |

## ServSwitch Affinity KVM Switch, 8-User Architecture

Access to up to 1000 CPUs for you and up to 15 of your staff members.

- Supports USB keyboards and mice.
- Up to 16 users can access up to 1000 CPUs in a system simultaneously.
- Supports PC, Sun, and PC UNIX CPUs.

✦✦ WARRANTY — 2 Years

CE Approval — Yes

| Item | Code |
|---|---|
| ServSwitch Affinity™ KVM Switch, 8-User Architecture DB25 Female/M34 Male | KV138A |

## Matrix ServSwitch for PC, 2 Users x 16 CPUs, Full Chassis

Manage your CPUs from two locations.

- Connect CPUs and control stations up to 30.4 m from the switch.

✦✦ WARRANTY — 2 Years

CE Approval — Yes

| Item | Code |
|---|---|
| Matrix ServSwitch for PC, 2 Users x 16 CPUs, Full Chassis | SW743A-R3 |

BLACK BOX NETWORK SERVICES

# You'll find it at Black Box.

## Installation & Maintenance

**Technical support by phone and installation on-site.**

**Our experts are there for you!**

Check out blackbox.eu

### Your on-line resource center

Improved webshop - Easily find the right product with all the neccessary technical info.

Library - Looking for technical info? Check out our extensive library of Black Box Explains tutorials, videos, product datasheets and more.

E-mailnews - Sign up for our monthly e-mail newsletter and receive the latest news.

www.blackbox.eu